

A Guide to

Protecting Coastal Resources Through the CAMA Permit Program



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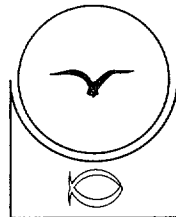
Division of Coastal Management
North Carolina Department of Natural Resources and Community Development

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A Guide to

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Through the CAMA Permit Program

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Introduction

The Importance of Protecting Coastal Resources

North Carolina's coast is an environment of delicate natural balances and the setting for intense – and sometimes conflicting – activities. Poorly sited construction along the oceanfront can destroy protective sand dunes and vegetation, place buildings and human lives in jeopardy from erosion and flooding, and block access to the public beach. Improper development in the state's sounds and tidal rivers, as well as the wetlands and shorelines surrounding them, can disrupt fish and shellfish habitats on which the state's commercial and recreational fisheries depend. North Carolina's Coastal Area Management Act (CAMA) states: "Unless these pressures are controlled by coordinated management, the very features of the coast which make it economically, aesthetically, and ecologically rich will be destroyed."

To prevent this destruction, the Coastal Area Management Act directs the Coastal Resources Commission (CRC) to identify and designate "areas of environmental concern" in which uncontrolled development might cause irreversible damage to property, public health, and the natural environment. These areas, known as AECs, contain natural hazards or environmental, economic, or social values that are of concern to the state as a whole. In carrying out its mandate from CAMA, the Coastal Resources Commission has designated four categories of AEC: the estuarine system, the ocean hazard system, public water supplies, and natural and cultural resource areas. These AECs cover virtually all of the coastal waters and three percent of the land area of the 20 coastal counties.

The Act further instructs the CRC to determine what types of development activities can take place in AECs without harming the natural system and to adopt standards showing how this can be done. Based on these standards, the CRC carries out a permit program to guide development within the AECs.

The intent of CAMA's permit program is not to stop development, but rather to make sure that development within AECs does not threaten public safety or the continued productivity and value of important natural areas. Most of the permits applied for under CAMA are issued.

Receiving any CAMA development permit does not mean that you can carry out the project in any way you choose. The permit carries with it an obligation to meet the Coastal Resources Commission's guidelines for development in areas of environmental concern. If these guidelines are not being followed, then the permit will be revoked; a fine may also be imposed if the work has harmed the state's coastal resources.

The challenge for development along the coast is to find ways for human activities to exist in harmony with the coast's precious natural resources. Our actions do not have to destroy the very things that draw us all to the coast if we design projects with respect for nature. The CAMA permit program and the CRC's standards for development in AECs are structured to enable such design. By fitting a project to these standards, you can help protect the coastal resources we have all come to enjoy, not only for everyone now, but also for generations to come.

This handbook is a guide to the CAMA permit program. It includes where and when a CAMA permit is required and how to apply for one. It also describes the "Areas of Environmental Concern" which are the foundation of the permitting program and why it is important to manage development in these areas. The book identifies the development activities in the AECs which require a permit. It also defines the standards that a project must meet in order to receive a CAMA permit.

While every attempt has been made to be as accurate as possible, the rules themselves are more detailed than are explained in this handbook and are always subject to amendment and updating by the Coastal Resources Commission. Therefore, those contemplating coastal development are strongly encouraged to contact the Division of Coastal Management staff before making detailed development plans.

Anyone who would like further information about the North Carolina Coastal Management Program may write to the Division of Coastal Management, N.C. Department of Natural Resources and Community Development, P.O. Box 27687, Raleigh, N.C. 27611-7687, or call (919) 733-2293.

Chapter One

How to Apply for a CAMA Permit

Does Your Project Need a Coastal Area Management Act Permit?

If you think your project is in or near an area of environmental concern, then you should check with the nearest Division of Coastal Management (DCM) field representative or local permit officer (LPO) to see if a permit is required. (See appendices for addresses and phone numbers.)

The Coastal Area Management Act requires a permit if the project meets **all** of the following conditions:

- it is located in one of the 20 counties covered by CAMA;
- it is in or affects an area of environmental concern (AEC) designated by the Coastal Resources Commission;
- it is considered "development" under the terms of the Act; and
- it does not qualify for an exemption identified by the Act or by the Coastal Resources Commission.

1. Is your project located in one of the 20 counties covered by CAMA?

If yes, a CAMA permit may be required.

The provisions of the Coastal Area Management Act only apply to the 20 counties located along the state's tidal rivers, sounds, and the Atlantic Ocean (see Figure 1). You do not need a CAMA permit if your project is not in one of these counties:

Beaufort	Hertford
Bertie	Hyde
Brunswick	New Hanover
Camden	Onslow
Carteret	Pamlico
Chowan	Pasquotank
Craven	Pender
Currituck	Perquimans
Dare	Tyrrell
Gates	Washington

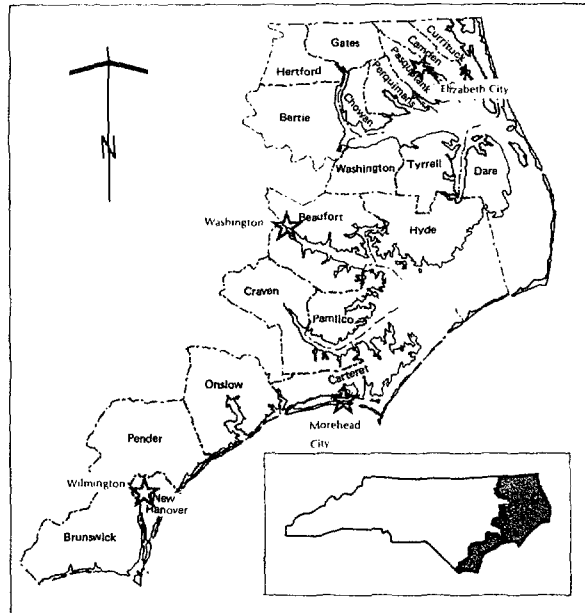


Figure 1. North Carolina's 20 coastal counties covered by the Coastal Area Management Act.

Permits issued by the Division of Coastal Management under the state's Dredge and Fill Act can be required in counties in addition to those listed above.

2. Is your project in or affecting an area of environmental concern?

If yes, a CAMA permit may be required.

If your project is located in one of the AECs described in this handbook (an estuarine system AEC, an ocean hazard system AEC, a public water supply AEC, or a natural or cultural resource AEC), chances are that you will need to get a CAMA permit. You are probably in an AEC if your project is:

- in or on the waters of the state;
- on a marsh or wetland area;
- within 75 feet of the mean high water line along an estuarine shoreline;
- within about 300 feet of the ocean beach;
- within about 1,000 feet of an inlet; or

- near one of the public water supplies designated as an AEC.

3. Does your project fall under CAMA's definition of "development"?

If yes, a CAMA permit may be required.

Section 103(5)(b) of the Coastal Area Management Act defines development as: "any activity in a duly designated area of environmental concern...involving, requiring, or consisting of the construction or enlargement of a structure; excavation; dredging; filling; dumping; removal of clay, silt, sand, gravel or minerals; bulkheading; driving of pilings; clearing or alteration of land as an adjunct of construction; alteration or removal of sand dunes; alteration of the shore, bank, or bottom of the Atlantic Ocean or any sound, bay, river, creek, stream, lake, or canal."

4. Does your project qualify for an exemption from the permit requirement?

If no, a CAMA permit is required.

Section 103(5)(b) of CAMA specifically excludes certain activities from the above definition of development and therefore exempts them from the permit requirement. These exempted activities are:

- road maintenance within the public right-of-way;
- utility maintenance and extensions to projects that already have CAMA permits;
- energy facilities to the extent covered by other laws or N.C. Utilities Commission rules;
- agricultural or forestry production which does not involve the excavation or filling of estuarine or navigable waters or coastal marshland;
- agricultural or forestry ditches equal to or less than six feet wide by four feet deep;
- emergency maintenance and repairs where

life or property are in serious danger; and

- the construction of an accessory building usually found with an existing structure, if no filling is involved.

In addition, Section 103(5)(c) of the Act allows the CRC to define certain classes of minor maintenance and improvements that are exempt from the permit requirement. The specific types of projects eligible for exemptions are those with successful track records in not damaging the resources around them. Projects exempted under this section are identified in the use standards described in chapter three.

In any case, it is best to check with a DCM field representative or local permit officer to see if your project qualifies for an exemption.

Does Your Project Need a Major Development Permit or a Minor Development Permit?

CAMA's permit program involves two main categories of permits: one for "major" development and one for "minor" development. In addition to these are general permits (see page 24).

You must obtain a major development permit if the project involves any of the following:

- alteration of more than 20 acres of land and/or water within an AEC;
- construction of one or more buildings covering a ground area greater than 60,000 square feet on a single parcel of land;
- excavation or drilling for natural resources on land in an AEC or under water; or
- another state or federal permit, license, or authorization (such as for dredging and filling, sedimentation control, wastewater discharge, or mining).

A CAMA major development permit is most commonly required for projects that must have a "Permit to Excavate and/or Fill" under the Dredge and Fill Act (G.S. 113-229). This is usually required if there is any dredging or filling of water or marsh, or if piers or docks are proposed.

Major development permits, which involve larger projects that are of concern to the state as a whole, are administered directly by the Division of Coastal Management and the Coastal Resources Commission.

If your project meets **none** of the above conditions, you will need to obtain a **minor development permit**. Minor development permits are administered by the local government under authority granted by the Coastal Area Management Act and using standards adopted by the Coastal Resources Commission.

Exemptions from the Major Development Permit

The Coastal Resources Commission does not require a **major development permit** for the maintenance and expansion of certain projects for which a state easement and/or Dredge and Fill permit has already been issued. Such a project qualifies for the exemption **only** if it meets **all** of the following conditions:

- the project's dimensions do not exceed 20 percent of the dimensions originally permitted;
- the project's purpose or primary use does not change; and
- such action will cause no damage to the natural environment and/or adjacent property owners.

The CRC has also exempted from the major development permit requirement minor additions or modifications to bulkheads, piers, docks, boathouses, and boat ramps that are already in place and permitted. The exemption is

aimed at simple modifications intended for private use; these must still meet specific criteria to qualify for the exemption. The DCM field representative can tell you what these criteria are and whether or not your project is exempt from the major development permit requirement. This exemption is officially stated in Title 15, Subchapter 7K, Section .0202 of the N.C. Administrative Code.

Exemptions from the Minor Development Permit

The Coastal Resources Commission does not require a **minor development permit** for the following development activities:

- the maintenance and repair (excluding replacement) of any structure in a similar manner, size, and location as it existed prior to damage, unless such repair or replacement would violate current CAMA standards; and
- accessory uses or structures related to the main use of the site that require no electricity, plumbing, or other service connections and that do not exceed 200 square feet of floor area.

In both of the above situations, the project must meet **all** of the following conditions to qualify for the exemption:

- it must not disturb more than 200 square feet of land area on a slope greater than 10 percent;
- it must not remove, damage, or destroy threatened or endangered plants and animals;
- it must not alter surface drainage channels;
- it must not alter the form or vegetation of a frontal dune;
- it must not be within 20 feet of any permanent surface waters; and

- it must comply with all applicable CAMA standards and local land use plans in effect at the time.

In any case, it is best to check with a DCM field representative or local permit officer to see if your project qualifies for an exemption. This exemption is officially stated in Title 15, Subchapter 7K, Sections .0302, .0303, and .0304 of the N.C. Administrative Code.

State Review of Projects Requiring Federal Permits

Projects that require federal permits or any form of federal authorization which are being proposed in the 20 coastal counties are reviewed by the Division of Coastal Management for consistency with the North Carolina Coastal Management Program. These reviews are mandated as a result of North Carolina receiving federal approval of its coastal management program in September 1978 under the U.S. Coastal Zone Management Act of 1972.

Under the Act, federal agencies cannot issue a permit for a project if it is found to be inconsistent with the state program. Finding that a project is consistent with the state program, however, does not mean that the federal permit must be issued.

Federal Licenses and Permits Subject to Consistency

The following are some of the common federal permits reviewed for consistency with the coastal management program:

- U.S. Army Corps of Engineers Section 10 permit for building structures in navigable waters
- U.S. Army Corps of Engineers Section 404 permit for placing fill material in wetlands

- U.S. Coast Guard permits for the construction or modification of bridges and causeways over navigable waters

Information about other federal licenses and permits subject to consistency can be obtained from the DCM field offices in Wilmington, Morehead City, Washington, and Elizabeth City.

Permit Review Process

The Division of Coastal Management is the state agency responsible for preparing a state response for federal permit applications in the 20 coastal counties. This involves coordinating and obtaining comments from other state agencies which review applications to ensure that proposed projects meet state requirements. This review is the basis for determining whether or not a project is consistent with the coastal management program.

There are separate review procedures for determining the consistency of projects proposed for designated areas of environmental concern and projects outside of designated areas of environmental concern but within any of the 20 coastal counties.

Projects Within AECs

A project proposed for construction within an AEC that requires a federal permit automatically requires a CAMA major development permit. Therefore, an application for a CAMA major permit must be submitted when a federal permit is applied for. The state has developed a joint application form with the U.S. Army Corps of Engineers, Wilmington District. Only one permit application needs to be filled out in order to apply for a federal Corps permit and a state CAMA permit.

When an applicant completes the application form, he or she must certify the consistency of the project with the coastal management program by signing the completed permit form which includes a statement to this effect. The issuance of a CAMA permit constitutes the state's concurrence with the applicant's certification.

The denial of a CAMA permit is a finding that the project is inconsistent with the management program.

Projects Outside AECs

The Division of Coastal Management is notified of projects outside AECs but within the 20 coastal counties by the federal agency from which a permit is being requested. In these cases, the federal agency informs the applicant of the consistency requirement. North Carolina has an agreement with most federal agencies which allows the agency to send some or all of the information needed to conduct a consistency review of the project.

Time Limits for Consistency Reviews

The state is allowed six months from receipt of an applicant's consistency certification, or receipt of the information needed to make a consistency determination, to conduct a consistency review. If a determination has not been made within three months of the beginning of a review, the state must let the federal agency and the applicant know the status of the review.

Applicant's Appeal Rights

If the state finds an applicant's project to be inconsistent with the coastal management

program, the applicant has the right to appeal the decision. The appeal must be filed with the U.S. Secretary of Commerce within 30 days of receipt of the state's objection. Guidance on how to file the appeal may be obtained from the Division of Coastal Management. In all cases, the appeal must be based on the grounds that the activity is consistent with the objectives of the federal Coastal Zone Management Act. The applicant must supply the Secretary of Commerce with detailed information that supports this position.

Division of Coastal Management and Corps of Engineers General Permits

The Division of Coastal Management and the U.S. Army Corps of Engineers issue general permits authorizing certain types of activities that have minimal environmental impacts. Any activity covered under a specific general permit has been certified to be consistent with the North Carolina Coastal Management Program. Therefore, a consistency certification is not required. However, a project must be conducted in accordance with the conditions of the general permit.

Minor Development Permits

If your project requires a minor development permit, you should contact the local permit officer for the community where the project is located (see appendices). The local permit officer (LPO) is a local government employee (usually the building inspector, zoning administrator, or planner) who has been trained by the Division of Coastal Management to review applications for consistency with CAMA standards, to issue minor development permits, and to advise applicants on how to design their projects.

The local permit officer will discuss the proposed project and give you an Application for CAMA Minor Development Permit (see Figure 2). The LPO can help you fill out the application and suggest ways to carry out the project to meet the CRC's guidelines for development in areas of environmental concern.

The Permit Application

The permit application packet asks for basic information about the project and the property involved. This information includes:

- the names, addresses, and telephone numbers of the landowners and authorized agents;
- the location, scale, and nature of the project;
- a statement of property ownership;
- a list of adjacent riparian (waterfront) property owners and their addresses; and
- a signed statement allowing the local permit officer to enter the property.

The information for the statement of ownership can be found on the deed to the property. The names of adjacent waterfront property owners are available from the local tax office.

Notifying Adjacent Property Owners

In addition to listing adjacent waterfront landowners, you must notify them of your project either in person or by mail. Failing to do this is grounds for revoking your permit if a neighboring property owner protests and appeals approval of the permit.

AEC Hazard Notice

If your project is located in an ocean hazard AEC (that is, a designated ocean erodible area, inlet hazard area, or high hazard flood area), you must fill out and sign an AEC Hazard Notice as part of the minor development permit application. This notice states that you recognize the natural hazards present in building on the site, that the Coastal Resources Commission does not guarantee the safety of your project, and that the CRC assumes no liability for future damage to the project.

Site Drawing

Your permit application must be accompanied by a site drawing which shows the dimensions and other characteristics of the property, as well as the location and nature of the project itself. The permit application form lists the specific information that must appear on the site drawing. The local permit officer can give suggestions on how to prepare the drawing and where to get the information that must appear on it.

To make the application easy to understand and review, the site drawing should be as clear and simple as possible (see Figure 4). It should be done on clean, white, 8 1/2" x 11" paper with black ink or dark, thin pencil. The drawing does not need to be to scale but significant dimensions should be indicated. It does not have to be prepared by an engineer or architect; however, it must provide clear and complete information.

Application Fee

When you submit the permit application form and site drawing to the local permit officer, you must also pay a \$25 fee to cover the administrative costs of processing the application. This should be paid with a check made out to the local government.

How the Application is Reviewed

Once the local permit officer has received all of the application materials, he or she will visit the project site, see if the project meets the Coastal Resources Commission's standards for development in the AEC, and see if the project complies with the local CAMA land use plan and local development ordinances (see Figure 5).

Site Visit

The local permit officer will visit the project site to make sure that the site drawing is accurate. The LPO will look for any condition (marshes, eroding shorelines, etc.) that the project will have to work around or overcome in order to meet the CRC's development standards. The permit officer will also post at the site an official notice that an application has been filed for a minor development permit (see Figure 3).

Compliance with CRC Standards

In conjunction with the site visit, the local permit officer will check to make sure that the proposed project complies with the CRC's "general standards" for that AEC and "specific use standards" for that type of development. The standards are described in this handbook; the

GENERAL INFORMATION	
1. LAND OWNER	
Name _____	
Address _____	
City _____	State _____ Zip _____ Phone _____
2. AUTHORIZED AGENT	
Name _____	
Address _____	
City _____	State _____ Zip _____ Phone _____
3. LOCATION/DESCRIPTION OF PROJECT _____	
4. AREAS OF ENVIRONMENTAL CONCERN (AEC) CLASSIFICATION (To be filled in by Local Permit Officer prior to completing application.)	
_____ Ocean Hazard _____ Estuarine Shoreline _____ Other _____	
5. PROPOSED USE	
_____ Residential _____ Commercial/Industrial _____ Other _____	
6. SIZE OF BUILDING IN SQUARE FEET: _____	
7. SIZE OF SITE IN SQUARE FEET: _____	
This application includes general information (this form), a site drawing as described on the back of this application, the ownership statement, the AEC hazard notice where necessary, a check for \$25.00 made payable to the locality, and any information as may be provided orally by the applicant. The details of the application as described by these sources are incorporated without reference in any permit which may be issued. Deviation from these details will constitute a violation of any permit. Any person developing in an AEC without a CAMA permit is subject to civil, criminal and administrative action.	
This the _____ day of _____, 19____	
Applicant's signature (or authorized agent) _____	
Indicate below address and phone if not shown above. _____	
OTHER PERMITS MAY BE REQUIRED.	
The activity which you are planning may require permits other than the CAMA minor permit you are applying for here. As a service we have compiled a listing of the kinds of permits which might be required. We suggest that you check over this list with your Local Permit Officer to determine which, if any, of these may apply to your project. This is not a requirement of CAMA, only a suggestion to help you complete your project as quickly as possible.	
zoning, drinking water well, septic tank (or other sanitary waste treatment system), burning, electrical, plumbing, heating and air conditioning, insulation and energy conservation, FIA certification, sand dune, sediment control, subdivision approval, mobile home park approval, highway connection, others.	

STATEMENT OF OWNERSHIP	
I, the undersigned, an applicant for a CAMA minor development permit, being either the owner of property in an area of environmental concern or a person authorized to act as an agent for purposes of applying for a CAMA minor development permit, certify that the person listed as landowner on this application has a significant interest in the real property described therein. This interest can be described as follows: (check one)	
_____ an owner of record title. Title is vested in _____, see Deed Book _____, page _____ in the _____ County Registry of Deeds.	
_____ an owner by virtue of inheritance. Applicant is an heir to the estate of _____, probate was in _____ County.	
_____ if other interest, such as written contract or lease, explain below or use a separate sheet attached to this application.	
NOTIFICATION OF ADJACENT PROPERTY OWNERS	
I furthermore certify that the following persons are owners of properties adjoining this property. I affirm that I have given ACTUAL NOTICE to each of them concerning my intent to develop this property and to apply for a CAMA permit.	
(Name)	(Address)
(1) _____	_____
(2) _____	_____
(3) _____	_____
(4) _____	_____
FOR DEVELOPERS IN OCEAN HAZARD AND ESTUARINE SHORELINE EROSION AREAS:	
I acknowledge that the land owner is aware that the proposed development is planned for an area which may be susceptible to erosion and/or flooding. I acknowledge that the local permit officer has explained to me the particular hazard problems associated with this lot. This explanation was accompanied by recommendations concerning stabilization and flood proofing techniques.	
PERMISSION TO ENTER ON LAND	
I furthermore certify that I am authorized to grant and do in fact grant permission to the local permit officer and his agents to enter on the aforementioned lands in connection with evaluating information related to this permit application.	
This the _____ day of _____, 19____	
Land owner or person authorized to act as his agent for purposes of filing a CAMA application	

Figure 2. Sample application form required when applying for a CAMA minor development permit.

local permit officer can explain the standards and how they affect a particular project.

Compliance with the Local CAMA Land Use Plan and Local Development Ordinances

The local permit officer will check to make sure that the project complies with the local CAMA land use plan. The land use plan is prepared by the local government to describe the community's policies for development and identifies different classifications of land where a particular activity is or is not allowed. Your project will be denied a CAMA permit if it does not comply with the policies and land classification in the land use plan.

The local permit officer will also check to make sure that the project complies with the local zoning ordinance, subdivision ordinance, and other development regulations. If the project will violate any of these local ordinances, then it cannot receive a permit. When you first talk to the LPO, it is a good idea to ask how the land use plan and local development regulations might affect your project.

Additional Information

If the local permit officer needs more information to review the application, you will be notified by certified or registered mail. If the review will take longer than the 25 days allowed


NOTICE

CAMA PERMIT APPLIED FOR

PROJECT _____

COMMENTS ACCEPTED THROUGH _____

APPLICANT _____



FOR MORE DETAILS CONTACT
THE LOCAL PERMIT OFFICER BELOW

Figure 3. Sample CAMA permit notice.

under the Coastal Area Management Act, the local permit officer will send you a notice extending the review time for an additional 25 days; this is also done by registered or certified mail. The LPO can extend the review period only once.

Public Notice

Once the LPO receives the complete application, he or she will publish a legal notice in the local newspaper. This notice lets other people in the community know that the project is being considered for a minor development permit. The public has the right to examine the application file to see if the project complies with the CRC's development standards, the local land use plan, and local development ordinances.

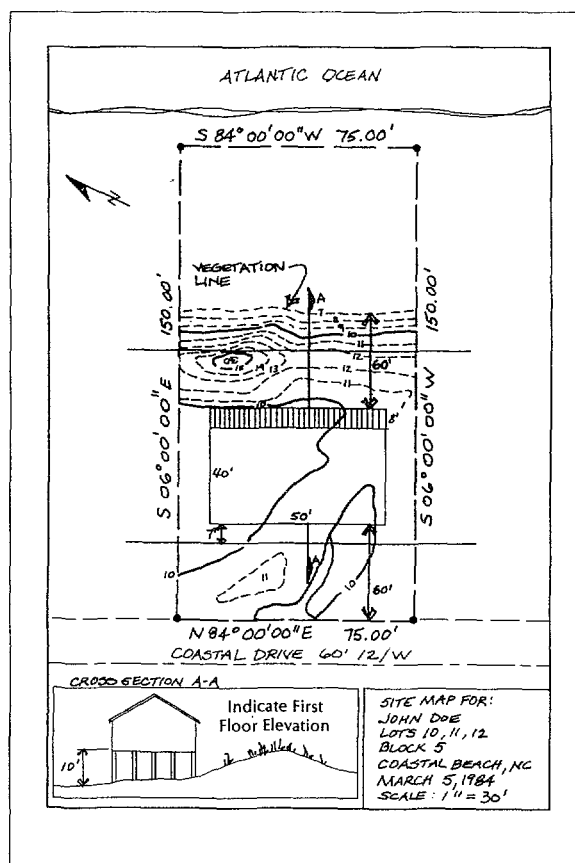


Figure 4. Sample site drawing to be included with a minor development permit application.

The Permit Decision

The Coastal Area Management Act gives the local permit officer 25 days to make a decision to approve or deny a minor development permit application. (As noted above, the LPO may extend this deadline once.) Based on the review of the application, the LPO will do one of three things:

- approve the permit with no conditions;
- approve the permit with conditions; or
- deny the permit.

An **approval** is issued if the project complies with the CRC's development standards, the local land use plan, and local development regulations.

An **approval with conditions** means that the applicant must take certain steps to make the project meet all requirements needed to receive a minor development permit. The LPO will list these conditions on the permit itself. Some common conditions attached to minor development permits are described below.

- "Where backfill is used, either a filter cloth or a ____-foot vegetative buffer will be used to prevent fill material from washing into adjacent waters or marshes."
- "Enclosed area is limited to a maximum area of 500 square feet."

- "No marsh grass will be graded or filled."
- "Disturbed areas will be immediately stabilized."
- "This permit must be renewed every six months."
- "Unenclosed gazebo attached to the walk shall not exceed 500 square feet."

A **denial** will be issued if the project will violate the CRC's standards for development in areas of environmental concern, the local CAMA land use plan, or a local development regulation.

Once the LPO makes the decision, you will be sent an official CAMA permit decision (see Figure 6) by registered or certified mail. The decision will be marked "permit," "conditional permit," or "denial." If your permit is **approved**, you must sign the permit decision form and return it to the LPO within 20 days. If you fail to do this, the decision will be considered a **denial**.

If an applicant for a minor development permit does not receive a decision or a notification of extension within 25 days of the date the application was received by the LPO, then the permit may be considered issued and the applicant can begin work on the project.

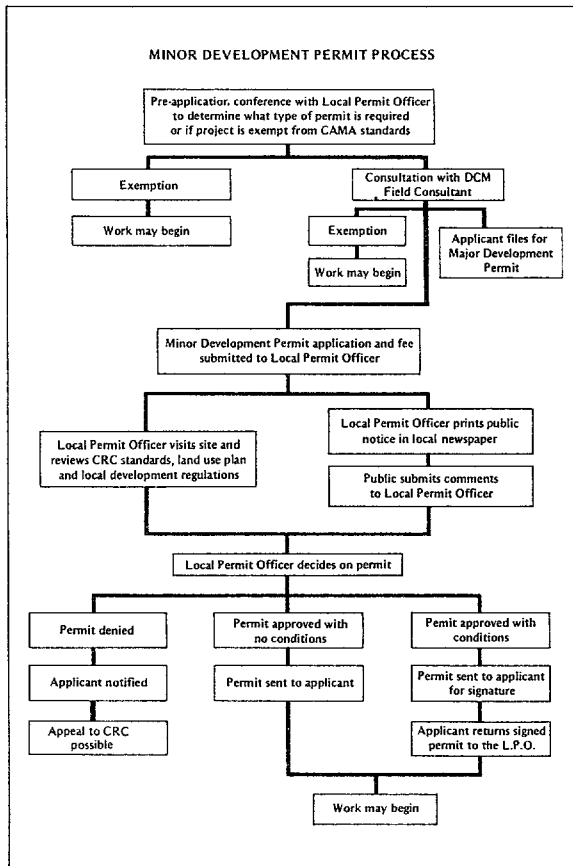


Figure 5. Minor development permit process.

**CAMA
MINOR DEVELOPMENT
PERMIT**

as authorized by the State of North Carolina, Department of Natural Resources and Community Development and the Coastal Resources Commission for development in an area of environmental concern pursuant to Section 113A-118 of the General Statutes, "Coastal Area Management."

Local Government: _____ Permit Number: _____

Issued to _____
authorizing development in _____ at _____
as requested in the permittee's application dated _____.

This permit, issued on _____, is subject to compliance with the application and site drawing (where consistent with the permit), all applicable regulations and special conditions and notes set forth below. Any violation of these terms may subject permittee to a fine, imprisonment or civil action; or may cause the permit to be null and void.

This permit action may be appealed by the permittee or other qualified persons within twenty (20) days of the issuing date. From the date of an appeal, any work conducted under this permit must cease until the appeal is resolved.

This permit must be on the project site and accessible to the permit officer when the project is inspected for compliance.

Any maintenance work or project modifications not covered under this permit require further written permit approval.

All work must cease when this permit expires on _____.

In issuing this permit it is agreed that this project is consistent with the local Land Use Plan and all applicable ordinances.

This permit may not be transferred to another party without the written approval of the Office of Coastal Management.

Local Permit Officer (signature) _____
NAME _____
ADDRESS _____

Permittee (signature required if special conditions above apply to permit) _____

Figure 6. Sample minor permit that will be issued if a project is approved by the local permit officer.

Major Development Permits

If your project requires a major development permit, you should contact the Division of Coastal Management's office closest to the community where the project is located. (See appendices for addresses and phone numbers.)

A field representative will visit the project site, discuss the proposed project with you, and give you copies of the Application for CAMA Permit for Major Development. Before you complete and submit the application, ask the field representative to suggest any changes or alternatives to the project that would help it meet the Coastal Resources Commission's guidelines.

The major development permit application form also serves as an application for three other state permits. Any project requiring one of these permits listed below also requires a CAMA major development permit.

- **Permit to Excavate and/or Fill:** required by the state's Dredge and Fill Act for any project involving excavation or filling in estuarine waters, tidelands, marshlands, or state-owned lakes;
- **Easement in Lands Covered by Water:** required by the Department of Administration for any filling activities in navigable waters which raise land above the normal high water mark; and
- **Water Quality Certification:** required by the Environmental Management Commission for any activity which may discharge fill into waters or wetlands and which requires a federal permit.

Combining the applications for all of these permits into one form reduces confusion about the application process and the time it takes to review permit applications. The form also serves as the application for permits from the U.S. Army Corps of Engineers required by Section

10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act.

In 1981, the Corps of Engineers agreed to entrust its processing for "Section 10/404" permits to the state of North Carolina for projects also requiring a CAMA major development permit and state Dredge and Fill Act permit. Under this arrangement, the state receives comments on each project from federal agencies. The Corps still retains the authority to conduct a separate federal review if necessary. However, 95 to 100 percent of the projects which previously had to have separate state and federal reviews now need only one from the state, thus avoiding duplication and delay.

The Permit Application

The permit application (see Figure 7) asks for basic information about the project and the property involved. This includes:

- the applicant's name, address, and telephone number;
- the location, scale, and nature of the project;
- the type of land to be excavated or filled, and the type of equipment to be used; and
- the intended use of the project and the amount of time required to complete it.

The completed application must be accompanied by a copy of the deed to the property involved (and a letter of permission from the property owner if not the applicant), a list of neighboring waterfront landowners, and an accurate work plat. The applicant's signature on the form allows the field representative to visit the site and review work occurring there.

Please type or print. Carefully describe all anticipated development activities, including construction, excavation, filling, paving, land clearing, and stormwater control. If the requested information is not relevant to your project, write N/A (not applicable). Items 1-4 and 8-9 must be completed for all projects.

1 APPLICANT

a. Name _____
 Address _____
 City _____ State _____
 Zip _____ Day phone _____
 b. Landowner or _____ Authorized agent
 c. Project name (if any) _____
 d. If the applicant is not the landowner, also give the owner's name and address. _____

2 LOCATION OF PROPOSED PROJECT

a. Street address or secondary road number _____
 b. City, town, community, or landmark _____
 c. County _____
 d. Is proposed work within city limits or planning jurisdiction? _____
 e. Name of body of water nearest project _____

3 DESCRIPTION AND PLANNED USE OF PROPOSED PROJECT

a. Describe all development activities you propose (for example, building a home, motel, marina, bulkhead, or pier). _____
 b. If you plan to build a marina, also complete and attach Form DCMAMP-2. _____
 c. Is the proposed activity maintenance of an existing project, new work, or both? _____
 d. Will the project be for community, private, or commercial use? _____

d. Describe the planned use of the project. _____

4 LAND AND WATER CHARACTERISTICS

a. Size of entire tract _____
 b. Size of individual lot(s) _____
 c. Elevation of tract above mean sea level or National Geodetic Vertical Datum _____
 d. Soil type(s) and texture(s) of tract _____
 e. Vegetation on tract _____
 f. Man-made features now on tract _____
 g. What is the CAMA Land Use Plan Classification of the site? (Consult the local land use plan.) _____
 h. How is the tract zoned by local government? _____
 i. How are adjacent waters classified? _____
 j. Has a professional archaeological survey been carried out for the tract? _____
 k. If so, by whom? _____

5 UPLAND DEVELOPMENT

Complete this section if the project includes any upland development.

a. Type and number of buildings, facilities, or structures proposed _____
 b. Number of lots or parcels _____
 c. Density (Give the number of residential units and the units per acre.) _____
 d. Size of area to be graded or disturbed _____
 e. If the proposed project will disturb more than one acre of land, the Division of Land Resources must receive an erosion and sedimentation control plan at least 30 days before land disturbing activity begins. If applicable, has a sedimentation and erosion control plan been submitted to the Division of Land Resources? _____
 f. Give the percentage of the tract within 75 feet of mean high water to be covered by impermeable surfaces, such as pavement, buildings, or rooftops. _____

g. List the materials, such as marl, paver stone, asphalt, or concrete, to be used for paved surfaces. _____

h. If applicable, has a stormwater management plan been submitted to the Division of Environmental Management? _____

i. Describe proposed sewage disposal and/or water treatment facilities. _____

j. Have these facilities received state or local approval? _____

k. Describe existing treatment facilities. _____

l. Describe location and type of discharges to waters of the state (for example, surface runoff, sanitary wastewater, industrial/commercial effluent, or "wash down"). _____

m. Water supply source _____

n. If the project is oceanfront development, describe the steps that will be taken to maintain established public beach accessways or provide new access. _____

o. If the project is on the oceanfront, what will be the elevation above mean sea level of the first habitable floor? _____

6 EXCAVATION AND FILL INFORMATION

a. Describe below the purpose of proposed excavation or fill activities (excluding bulkheads, which are covered in Section 7). _____

	Length	Width	Depth
Access channel (MLW) or (NWL)			
Boat basin			
Other (breakwater, pier, boat ramp, rock jetty)			
Fill placed in wetland or below MHW			
Upland fill areas			

b. Amount of material to be excavated from below water level in cubic yards _____
 c. Type of material _____
 d. Does the area to be excavated include marshland, swamps, or other wetlands? _____
 e. High ground excavation, in cubic yards _____
 f. Dimensions of spoil disposal area _____
 g. Location of spoil disposal area _____
 h. Do you claim title to the disposal area? _____
 i. If not, attach a letter granting permission from the owner. _____
 j. Will a disposal area be available for future maintenance? _____
 k. If so, where? _____
 l. Does the disposal area include any marshland, swamp, or water area? _____
 m. Will the fill material be placed below mean high water? _____
 n. Amount of fill in cubic yards _____
 o. Source of fill material _____
 p. Will fill material be placed on marsh or other wetlands? _____
 q. Dimensions of the wetland to be filled _____
 r. How will excavated or fill material be kept on site and erosion controlled? _____
 s. What type of construction equipment will be used (for example, dragline, backhoe, or hydraulic dredge)? _____
 t. Will wetlands be crossed in transporting equipment to the project site? _____ If yes, explain the steps that will be taken to lessen environmental impacts. _____

7 SHORELINE STABILIZATION

a. Length of bulkhead or riprap _____
 b. Average distance seaward of mean high water or normal water level _____
 c. Shoreline erosion during preceding 12 months, in feet _____
 d. Type of bulkhead material _____
 e. Amount of fill, in cubic yards, to be placed below mean high water _____
 f. Type of fill material _____

Figure 7. Sample application form required when applying for a CAMA major development permit.

One copy of the completed application must be returned to the Division of Coastal Management's field office so review of the application can begin. If a federal permit is required, a copy of the completed application must be sent to the U.S. Army Corps of Engineers' Wilmington District Office. This request causes the state and federal reviews to begin at the same time. (See appendices for addresses and telephone numbers). The third copy of the completed application is for your files.

Proof of Ownership

If the major development permit application is also an application for a state Dredge and Fill Act permit, a copy of the deed (or other document showing title to the land) must be attached to the copy sent to the Division of Coastal Management. A copy of the deed can be obtained from the county register of deeds office. If the applicant does not claim to be the owner of the property, then he or she must also submit

a copy of the deed along with written permission from the property owner to carry out the project.

Notifying Adjacent Riparian Property Owners

The applicant must include in the application package a list of the names and addresses of the owners of adjacent waterfront properties. These can be obtained from the county tax supervisor's office.

If you are applying for a state dredge and fill permit as well as a CAMA major development permit, you must notify these persons about the proposed project by sending them a copy of the completed application by certified or registered mail, if their addresses can be determined. If certified or registered mail is used, then copies of the postal receipts must be attached to the application form. If the addresses of the neighboring landowners cannot be determined, then the applicant must publish a notice in the local

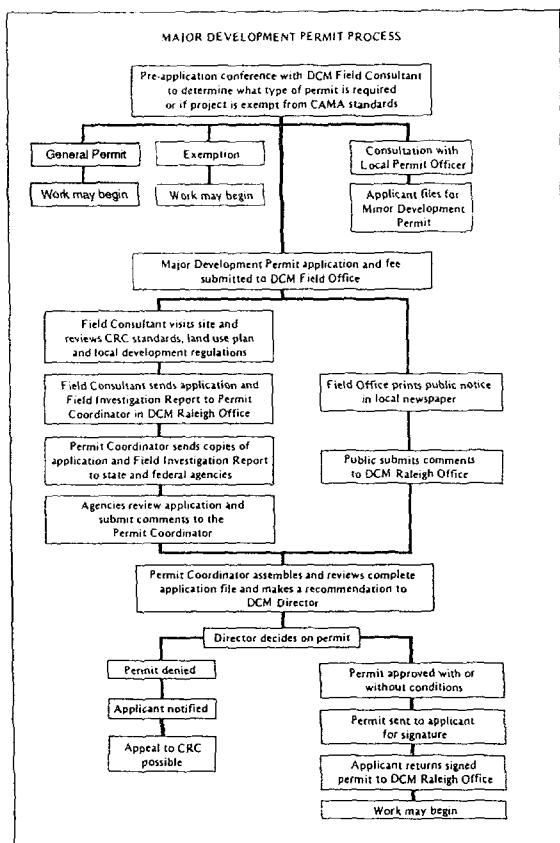


Figure 8. Major development permit process.

newspaper. Forms for notifying adjacent owners are available for the applicant's convenience from the DCM field representative (see Figure 9). All applicants should check with the field representative beforehand about what type of notification is required.

State law gives any party affected by the proposed project 30 days to comment on it from the date of notification. Objections to the project do not necessarily result in denial of the permit; however, any reasonable objections must be considered in the Division of Coastal Management's review of the application.

AEC Hazard Notice

If your project is located in an ocean hazard AEC (that is, a designated ocean erodible area, inlet hazard area, or high hazard flood area), you must fill out and sign an AEC Hazard Notice as part of the permit application. This notice states

ADJACENT RIPARIAN LANDOWNERS STATEMENT

General Statute 113-229 requires that riparian landowners with property adjoining a proposed excavation and/or fill project be given thirty (30) days in which to comment on the project. This form allows the adjacent riparian landowner to express either: (1) that he objects to the project; or, (2) that he does not object and desires to waive his right to the 30-day period so that the processing of the application can progress more rapidly. Of course, the adjacent riparian landowner need not sign this form at all if he so chooses.

I, _____, am an adjacent riparian property owner and have seen a copy of the application submitted by _____ dated _____, 19____, wherein said applicant requests a permit to excavate, fill, or otherwise alter the land and water adjacent to my property.

I have no objection to the project as presently proposed and hereby waive that right of objection as provided in General Statute 113-229.

I have objections to the project as presently proposed and comments are attached.

Signature of Adjacent Riparian Landowner: _____

DATE: _____

Figure 9. Sample form to be sent to adjacent property owners for comments on proposed projects.

that you recognize the natural hazards present in building on the site, that the Coastal Resources Commission does not guarantee the safety of your project, and that the CRC assumes no liability for future damage to the project.

Site Maps and Work Plats

The permit application must be accompanied by a vicinity map showing the location of the project, and work plats showing the type of work to occur (see Figure 10).

The **vicinity map** is a small scale map showing the location of the work site. For this, you may use a U.S. Geological Survey navigation chart, a survey map, or a county road map. An aerial photo would be helpful, but is not required. The map should have an arrow indicating the project's location (see Figure 10(B)) and should identify the source and title of the map used. The vicinity map may be on a separate sheet or, preferably, may be drawn as an inset on a corner of the work plat.

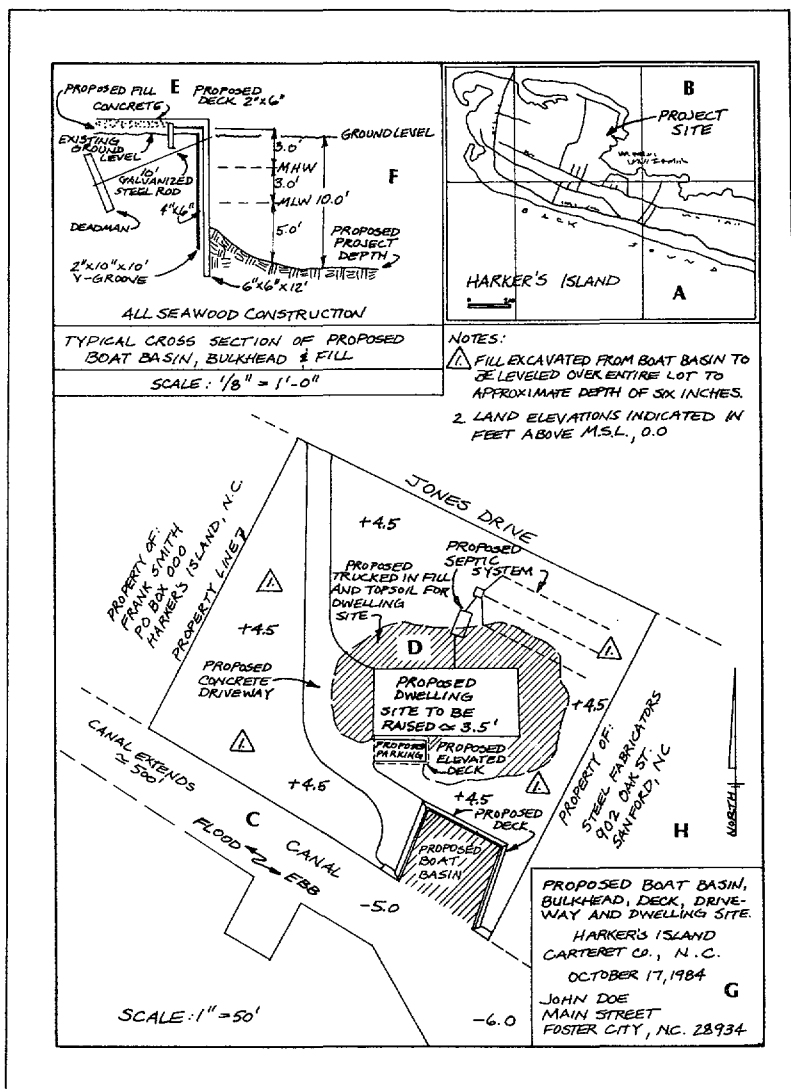


Figure 10. Sample work plat and vicinity map to be included with a major development permit application.

The **work plat**, or project plan, must indicate the approximate mean low water line (MLW), the mean high water line (MHW), and the extent of any marshland in or near the proposed work site. All coves, creeks, and other water bodies should be included in the shoreline sketch. Arrows should indicate the directions of ebb and flood tides and the flow directions of streams (see Figure 10(C)). The work plat must show property boundaries as they appear on the deed, and the names of adjacent property owners. The work plat should show existing and proposed man-made structures, such as docks, bulkheads, and houses, with some way of indicating what

exists now and what is proposed. All work plans must be drawn to scale (1"=200' or less) to make them easier to understand and evaluate.

The work plat must also clearly indicate and describe any areas to be excavated or filled, including the exact location of spoil disposal sites (see Figure 10(D)). When fill is to be placed behind a bulkhead or dike, the plan must show that it will be adequate to confine the fill (see Figure 10(E)). There should also be a note indicating the depth of excavation below the mean low water mark and the cubic yards of material to be removed.

A cross-sectional diagram is required for each proposed excavation, fill, or structure (including bulkheads, dikes, and spoil retention works). The cross-sectional diagram should show the depth of the excavation, or the elevation of the fill, relative to the existing ground level, the mean high water level, and the mean low water level (see Figure 10(F)). The mean low water line should be the reference for other water depths and land elevations shown on the plat.

Each drawing should have a simple title block to identify the project, the name of the applicant, the map scale, and the date the map was prepared (see Figure 10(G)). The title block should also indicate whether the work is new or for maintenance purposes, who prepared the drawing, and to what scale it is drawn.

All maps and plans must have the usual meridian arrow pointing north (see Figure 10(H)). When two drawings are shown on the same sheet, they must be drawn so that the meridians are parallel. North must be at the top of the drawing.

These drawings are attached to, and therefore are part of, the permit application. You may prepare the maps and plans yourself, or hire a surveyor, engineer, or architect to do them. In any case, they must be accurate and neatly prepared in the form described. Use as few sheets as necessary to show the proposed work. A complete set of maps and plans must be attached to each application. Originals are preferred. The drawings should be in black pencil or india ink on clean, white, 8 1/2" x 11" paper, with a margin of at least 1" along the left edge (for binding) and at least a 1/2" margin along the other three sides. Since the law requires numerous state and federal agencies to review the application, the drawings must be neat and clear enough to permit photographic reproduction. If blue line copies are used, then you must submit 16 sets of prints with the application.

Marinas/Stormwater Management Plan

If the proposed project involves docking or storing more than 10 boats, the application includes an additional page for submitting detailed information about the marina's construction and operation. If the Division of Environmental Management determines that a stormwater management plan is required under its rules, an additional form must be submitted.

Detailed information on both of these applications' requirements can be obtained from the DCM field representative.

Additional Information

If the Division of Coastal Management needs more information about the project during its review of the application, it will notify you by mail.

Activities requiring a major development permit are often part of a larger development project that takes place outside of the AEC. The Division of Coastal Management may ask for full information on the entire development project to see how it might affect the quality of coastal resources. This helps in evaluating the major development permit application and in determining if the proposed work is consistent with the CRC's development policies.

Application Fee

When you submit the permit application materials to the DCM field representative, you must also pay a \$100 fee to help defray the permit processing costs. This should be paid with a check made out to the Division of Coastal Management.

How the Application is Reviewed

Once the DCM field representative has received all of your application materials, he or she will visit the project site, see if the project meets the guidelines for development in that

AEC, and see if the project complies with the local CAMA land use plan and local development ordinances (see Figure 8).

Site Visit

The field representative will visit the project site to make sure that the site maps and work plans are accurate. The field representative will look at conditions that the project will have to take into account to meet the Coastal Resources Commission's standards, and will also post an official notice that an application has been filed for a CAMA major development permit.

Compliance with CRC Standards

In conjunction with the site visit, the field representative will check to make sure that the proposed project complies with the CRC's "general standards" for that AEC and "specific use standards" for that type of development. The standards are described in this handbook; the DCM field representative can explain the standards and how they affect a particular project.

Compliance with the Local CAMA Land Use Plan and Local Development Ordinances

The DCM field representative will check to make sure that your project complies with the local CAMA land use plan. The land use plan is prepared by the local government. It sets forth the community's policies regarding development and identifies different classifications of land where a particular activity is or is not allowed. Your project will be denied a CAMA permit if it does not comply with the policies and classifications of the land use plan.

The project will be reviewed for compliance with the local zoning ordinance, subdivision ordinance, and other governmental regulations. If the project will violate any of these local ordinances, then the Coastal Area Management Act prohibits the Division of Coastal Management from approving a major development permit for it.

When you first talk to the field representative, it is a good idea to ask about how the land use plan and local development regulations might affect your project.

Public Notice

Once the field representative receives your complete application, the Division of Coastal Management will publish a legal notice in the local newspaper. This notice lets other people in the community know that your project is being considered for a major development permit. The public has the right to examine the application file to see if the project complies with the CRC's development standards, the local land use plan, and local development ordinances.

Review by State and Federal Agencies

The complete major development permit application is circulated to state and federal agencies for review before the Division of Coastal Management makes a decision to approve or deny the permit. The application for a CAMA major development permit is an "umbrella" document. By completing and submitting the one form, you can also request the Division of Coastal Management's approval of a state Dredge and Fill Act permit, the Department of Administration's approval of an Easement in Lands Covered by Water, the Division of Environmental Management's approval of a Water Quality Certification, and the U.S. Army Corps of Engineers' approval of a Section 404/Section 10 permit. The application is circulated to all of these agencies plus those responsible for protecting wildlife, historical sites, public health, and water resources, as listed below.

Federal

Army Corps of Engineers
Environmental Protection Agency
National Marine Fisheries Service
Fish and Wildlife Service

State

Department of Administration
Department of Transportation
Division of Health Services

Division of Community Assistance
 Division of Archives and History
 Division of Land Resources
 Division of Environmental Management
 Division of Marine Fisheries
 Division of Water Resources
 Wildlife Resources Commission

Each major development permit application is reviewed by these agencies to ensure that the project will not harm public resources. Each agency returns its comments to the Division of Coastal Management. The comments are used in addition to all the other information on the project in deciding whether to issue or deny the permit.

The DCM field representative's written project review report and all agency review comments are considered public documents and are available for public inspection. Upon request, copies are furnished to the applicant without charge.

The Permit Decision

The Coastal Area Management Act gives the Division of Coastal Management 75 days from the date the field representative accepts the application as complete to approve or deny a major development permit. This can be extended once for an additional 75 days when more time is needed for other agencies to review the application. The Division of Coastal Management will delay the 75-day period when more information from the applicant is needed to complete the application file.

After visiting the project site and examining the application file, the field representative will submit a field investigation report to a major permit officer in DCM's Raleigh office. The major permit officer then coordinates DCM's review of the project with other agencies. He or she will submit a recommendation based on the field report, comments from adjacent property owners and other affected persons, and comments from state and federal review agencies to the director of the Division of Coastal Management.

Based on this information, the director will do one of three things:

- approve the permit with no conditions;
- approve the permit with conditions; or
- deny the permit.

An **approval** is issued if the project complies with the CRC's development standards, the local land use plan, and local development regulations. Once the major development permit is approved and issued, the project must be constructed according to the permit and all rules and policies of the Coastal Resources Commission.

An **approval with conditions** means that the applicant must take certain actions to meet all requirements and receive a major development permit. The Division of Coastal Management will list these "conditions" on the permit itself.

Permit Class	STATE OF NORTH CAROLINA Department of Natural Resources and Community Development and Coastal Resources Commission Permit for <input type="checkbox"/> Major Development in an Area of Environmental Concern pursuant to NCGS 113A-118 <input type="checkbox"/> Excavation and/or filling pursuant to NCGS 113-229	Permit Number
Issued to _____ authorizing development in _____ County as _____ as requested in the permittee's application dated _____		
This permit, issued on _____, is subject to compliance with the application (where consistent with the permit), all applicable regulations, special conditions and notes set forth below. Any violation of these terms may subject permittee to a fine, imprisonment or civil action, or may cause the permit to be null and void.		
<div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>This permit action may be appealed by the permittee or other qualified persons within twenty (20) days of the issuing date. An appeal requires resolution prior to work initiation or construction, as the case may be. This permit must be accessible on-site to Department personnel when the project is inspected for compliance. Any maintenance work or project modification not covered hereunder requires further Departmental approval. All work must cease when the permit expires on _____.</p> <p>In issuing this permit, the State of North Carolina agrees that your project is consistent with the North Carolina Coastal Management Program.</p> </div> <div style="width: 45%; text-align: right;"> <p>Signed by the authority of the Secretary of DNCR and the Chairman of the Coastal Resources Commission</p> <p>David W. Owens, Director Office of Coastal Management</p> <p>This permit and its conditions are hereby accepted</p> <p>_____ Signature of Permittee</p> </div> </div>		

Figure 11. Sample major permit that will be issued if a project is approved by the Division of Coastal Management.

Some common conditions attached to major development permits include:

- "The bulkhead alignment will approximate the mean high water level."
- "No marsh grass will be excavated and/or filled."
- "No excavated or fill material will be placed at any time in any marsh or surrounding waters, outside of the alignment of the fill area indicated on the plat."
- "The riprap material must be free of loose dirt or any other pollutant in other than trace quantities."
- "In order to protect water quality, runoff from the construction area must not visibly increase the amount of suspended sediments in adjacent waters."

If the major development permit is **approved** or **approved with conditions**, you will receive in the mail an original and a copy of the permit (see Figure 11), signed by the director of the Division of Coastal Management. You cannot begin work on the project until you sign both and return the copy to DCM. Any conditions will be listed on the permit.

By signing this document, you agree to abide by all CAMA standards, any conditions stated on the permit, and the work plat you submitted with the application. By signing the permit, you also waive the right to appeal any conditions placed on the permit.

A **denial** will be issued if the project will violate the Coastal Resources Commission's standards for development in areas of environmental concern, the local CAMA land use plan, or a local development regulation. If the application for a major development permit is also an application for a state Dredge and Fill Act permit, both permits can be denied if it is found that:

- the proposed dredging and filling will obstruct or damage public use of waterways;
- the project will diminish the value and enjoyment of another waterfront owner's property;
- the project will damage or threaten the public health, safety, and general welfare;
- the project will threaten the quality or quantity of public and private water supplies; or
- the project will damage wildlife or fisheries.

If the major development permit is denied, the Division of Coastal Management will send a letter stating that by certified or registered mail.

If an applicant for a major development permit does not receive a decision within 75 days of the date the application was filed, or does not receive notification that the review period has been extended, then the permit is automatically issued and the applicant can begin work on the project (after any other required federal permits have been obtained).

General Permits

Certain routine types of development which would require either a major or minor permit are eligible for a general permit. The general permit has streamlined the permit process for projects which pose little or no threat to the environment, and which were routinely permitted before the general permit was adopted. The general permit does not require the standard permit application and review period for projects. In most cases approval for a project can be granted on the same day the request is made.

General permits have been adopted by the Coastal Resources Commission to apply to the following forms of development:

- construction of private piers, docks, and boathouses;
- protection of the estuarine shoreline with bulkheads and riprap along alignments not extending over five feet into the water;
- construction of wooden groins for estuarine shoreline protection;
- construction and maintenance of boat ramps along the estuarine shoreline;
- maintenance dredging of channels, canals, boat basins, and ditches when excavation does not involve the removal of more than 1,000 cubic yards of material;
- installation of aerial and underwater utility lines in estuarine areas of environmental concern;
- emergency work requiring a CAMA and/or dredge and fill permit; and
- moving sand from above the mean high water line on ocean beaches to create protective dunes.

Each general permit has a set of general and specific conditions which must be met before a project can be approved. These include:

- no wetland alteration;
- no impacts on adjoining property; and
- no unreasonable interference with navigation.

The details of these conditions can be explained by a DCM field representative. Any development under this permit must be consistent with local regulations, guidelines for areas of environmental concern, and local land use plans.

The Application Process

To begin the application process, contact the nearest DCM field representative. (See appendices for addresses and phone numbers). The representative will visit the project site to determine if the proposed development is a candidate for a general permit. If so, the applicant must complete a one-page application/permit form providing his or her name and address, location of the project, and a description of the proposal (see Figure 12). A sketch of the project will be made on the same form. The applicant must also document that the adjacent riparian property owners have agreed in writing that they have no objections to the proposed project.

If the project is approved, the field representative will sign the application/permit form, authorizing the work. The project must then be carried out according to the approved plan. If the project is not a candidate for a general permit, the applicant will be assisted in preparing an application form for a standard major or minor permit.

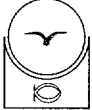
	<p style="margin: 0;">CAMA AND DREDGE AND FILL GENERAL PERMIT</p> <p style="margin: 0; font-size: small;">as authorized by the State of North Carolina, Department of Natural Resources and Community Development and the Coastal Resources Commission in an area of environmental concern pursuant to 15 NCAC _____</p>
<p style="margin: 0;">Applicant Name _____ Phone Number _____</p> <p style="margin: 0;">Address _____</p> <p style="margin: 0;">City _____ State _____ Zip _____</p> <p style="margin: 0;">Project Location (County, State Road, Water Body, etc.) _____</p> <p style="margin: 0;">Type of Project Activity _____</p>	
<p style="margin: 0; font-weight: bold; font-size: small;">PROJECT DESCRIPTION</p> <p style="margin: 0; font-size: x-small;">Pier (dock) length _____</p> <p style="margin: 0; font-size: x-small;">Groin length _____</p> <p style="margin: 0; font-size: x-small;">number _____</p> <p style="margin: 0; font-size: x-small;">Bulkhead length _____</p> <p style="margin: 0; font-size: x-small;">max. distance offshore _____</p> <p style="margin: 0; font-size: x-small;">Basin, channel dimensions _____</p> <p style="margin: 0; font-size: x-small;">cubic yards _____</p> <p style="margin: 0; font-size: x-small;">Boat ramp dimensions _____</p> <p style="margin: 0; font-size: x-small;">Other _____</p>	<p style="margin: 0; font-weight: bold; font-size: small;">SKETCH (SCALE: _____)</p> <div style="border: 1px solid black; height: 150px; width: 100%;"></div>
<p style="margin: 0; font-size: x-small;">This permit is subject to compliance with this application, site drawing and attached general and specific conditions. Any violation of these terms may subject the permittee to a fine, imprisonment or civil action; and may cause the permit to become null and void.</p> <p style="margin: 0; font-size: x-small;">This permit must be on the project site and accessible to the permit officer when the project is inspected for compliance. The applicant certifies by signing this permit that 1) this project is consistent with the local land use plan and all local ordinances, and 2) a written statement has been obtained from adjacent riparian landowners certifying that they have no objections to the proposed work.</p> <p style="margin: 0; font-size: x-small;">In issuing this permit the State of North Carolina certifies that this project is consistent with the North Carolina Coastal Management Program.</p>	
<p style="margin: 0; font-size: x-small;">_____ applicant's signature</p> <p style="margin: 0; font-size: x-small;">_____ permit officer's signature</p> <p style="margin: 0; font-size: x-small;">issuing date _____ expiration date _____</p> <p style="margin: 0; font-size: x-small;">attachments _____</p> <p style="margin: 0; font-size: x-small;">application fee _____</p>	

Figure 12. General permit application/permit form issued for routine types of development activities.

Variances, Appeals, and Enforcement Actions

Variances

An applicant may petition the Coastal Resources Commission for a variance to undertake a project that is otherwise prohibited by the CRC's development standards. Applying for a variance implies that you recognize the CRC's rules for development as valid, but are asking for special flexibility in the application of these rules due to exceptional conditions or hardships at the project site. Anyone applying for a variance should contact the Division of Coastal Management's field representative for the community where the project is proposed. Variance petitions may only be considered after a final permit decision has been issued.

The petition for a variance must be filed with DCM on a standard form. It must be accompanied by additional information on the nature of the project and the reasons for requesting a variance. The Division of Coastal Management will then schedule a variance hearing and prepare recommendations for the CRC to either approve or deny the variance.

There are two procedures for consideration of variances. If there are no disputed facts, an **expedited** variance procedure is available. The variance petition, a set of stipulated facts, and statements by the petitioner and DCM staff are submitted directly to the CRC for decision. The petition for a variance must be received four weeks before the CRC meeting at which the case will be heard. The facts in the case must be agreed to by DCM and the petitioner no later than two weeks before the CRC meeting. If there are disputed facts, a **contested case hearing** is held following the same procedures set out for appeals in the next section. In these instances, the hearing officer's report is then submitted to the CRC for a final decision. In both instances, a notice of the variance petition is published in the newspaper and members of the public are offered the opportunity to comment.

To receive a variance, the petitioner must adequately show that:

- strict application of the CRC's development standards results in practical difficulties and/or unnecessary hardship;
- these difficulties or hardships result from conditions peculiar to the property involved;
- these conditions could not have been anticipated by the CRC when it adopted the development standards; and
- The proposed development is consistent with the spirit, purpose, and intent of the CRC's development standards.

If the CRC is satisfied with the petitioner's reasoning, it may approve the variance with or without specific conditions. Detailed standards on the variance process may be found in Title 15, Subchapter 7J, Section .0700, of the N.C. Administrative Code.

Appeals

The Coastal Area Management Act and Dredge and Fill Act grant an automatic right of appeal to the permit applicant and the secretary of the Department of Natural Resources and Community Development, who must notify the Division of Coastal Management within 20 days of the permit decision that they want to appeal. No development is allowed while the appeal request is being considered. Any other directly affected person or agency who wishes to appeal a permit decision must request a hearing within 20 days of the permit decision from the chairman of the Coastal Resources Commission and must show that:

- CAMA regulations have been violated;

- the petitioner is directly affected by the permit decision; and
- the appeal has a reasonable likelihood of success.

In order to legally file appeals, detailed procedures and forms required by the state Administrative Procedures Act must be carefully followed. Appeals generally must be on these forms, notarized, and filed with the Office of Administrative Hearings in Raleigh (address in appendix). Further information on this can be obtained from that office or any DCM office.

Once the request for a hearing has been made, all work authorized by the permit must be suspended until the matter is settled. If a hearing is granted, the Division of Coastal Management schedules an appeal hearing before an administrative law judge. The parties to the hearing may be represented by attorneys, but this is not required. After the hearing, a full transcript of the hearing is prepared and each party submits its proposed findings and conclusions to the judge. Based on this, the judge recommends a decision to the full Coastal Resources Commission. The CRC then, in regular open session, decides to either uphold or overturn the permit decision. The Act requires the entire appeals process – from the initial filing for appeal to the CRC’s decision – to be completed within 180 days.

Any appeal of the CRC’s decision on variances or appeals may be made to the Superior Court.

Enforcement Actions

Permits issued under the Coastal Area Management Act – and the conditions in those permits – are intended to protect the natural environment, public health, and economic future of the North Carolina coastal area. The General Assembly has provided penalties to be applied when CAMA’s permit requirements are violated.

A violation of the Act occurs when development is undertaken in an AEC without a valid CAMA permit, or when any work that is permitted is carried out in a way that does not comply with the CRC’s standards or with the permit’s conditions. When a violation occurs, the local government or the Division of Coastal Management can issue a cease and desist order, require restoration of the damaged public resources, and assess a penalty for the violation.

In all violations, the first priority of the Division of Coastal Management and the Coastal Resources Commission is to seek prompt restoration of the damaged area. If necessary, injunctions may be imposed by the courts when voluntary efforts fail. Criminal penalties can also be imposed by the courts for willful permit violations. The CRC may also assess civil penalties of up to \$2,500 for major development violations and civil penalties up to \$250 for minor development violations. Each day the violation continues may be considered a separate violation.

The amount of the civil penalty can be contested by appeal to the CRC. Civil penalties are proposed by the Department of Natural Resources and Community Development based on a schedule set by the CRC. If contested, a formal appeal hearing is held on the transcript and findings of this hearing are presented before the CRC at one of its regular meetings, where the full CRC decides whether or not the proposed penalty is appropriate.

Enforcement problems will not arise if work on the project is carried out in compliance with the CRC’s development standards and any special permit conditions. Work on the site will be periodically inspected by DCM’s field representative and/or the local permit officer. When you get a CAMA permit you should consult with the field representative or local permit officer before actually beginning work to make sure that any construction methods you use will meet all requirements and not cause unnecessary damage to the coast’s natural resources.

Details on the enforcement process may be found in Title 15, Subchapter 7J, Section .0400, of the N.C. Administrative Code.

Chapter Two

Areas of Environmental Concern and the Coastal Resources Commission's Development Guidelines

Estuarine System

Areas of Environmental Concern

In carrying out its responsibilities under the Coastal Area Management Act, the Coastal Resources Commission has designated four categories of Areas of Environmental Concern (AECs): **the estuarine system, the ocean hazard system, public water supplies, and natural and cultural resource areas.** These AECs, and the standards for development in them, cover almost all coastal waters and three percent of the land in the 20 coastal counties. The following descriptions of the estuarine system AECs will help you identify whether or not your project is located in an area of environmental concern, as well as explain each area's importance and the reasons why it is necessary to manage development there.

The **estuarine system** is the coast's broad network of brackish sounds, marshes, and the shorelines surrounding them. These lands and waters support an abundance of plant and animal life and are a great economic and recreational resource. Each component of the estuarine system depends in some way on the others. Any alteration, however slight, in one part of the estuarine system may have unforeseen consequences in other parts of the system. For example, the destruction of a salt marsh may lower the quality of estuarine waters and stimulate the erosion of nearby shorelines.

As an interdependent collection of lands and waters, the estuarine system needs coordinated management to ensure that human activities in one part of the system do not damage other parts of the system. Development in the estuarine system needs to be managed in order to protect the system's important values and benefits. These values include:

- good water quality for commercial and sport fishing, recreation, and human consumption of fish and shellfish;

- continued free public use of navigable waters; and
- undisturbed nursery areas, spawning areas, shellfish beds, and other important habitats.

The following components of the estuarine system have been designated as AECs: **estuarine waters, public trust areas, coastal wetlands, and estuarine shorelines** (see Figure 13). The coastal management program gives highest priority to the protection and coordinated management of these AECs to safeguard and perpetuate their biological, economic, recreational, and aesthetic values. The CAMA permit standards for these areas are designed to make development compatible with the natural environment and to reduce damage to public resources and private property.

Estuarine Waters

Estuarine waters are the most extensive component of the estuarine system: the state's sounds and tidal rivers link the wetlands, estuarine shorelines, and public trust areas. The Coastal Area Management Act defines estuarine waters as "all the waters of the Atlantic Ocean within the boundary of North Carolina and all the waters of the bays, sounds, rivers, and tributaries thereto seaward of the dividing line between coastal fishing waters and inland fishing waters, as set forth in an agreement adopted by the Wildlife Resources Commission and the Department of Natural Resources and Community Development." For the specific boundaries of estuarine and inland waters contact the nearest Division of Coastal Management office. (See appendices for addresses and phone numbers).

The high biological productivity of the estuarine system depends on the unique water circulation patterns of the estuarine waters. These

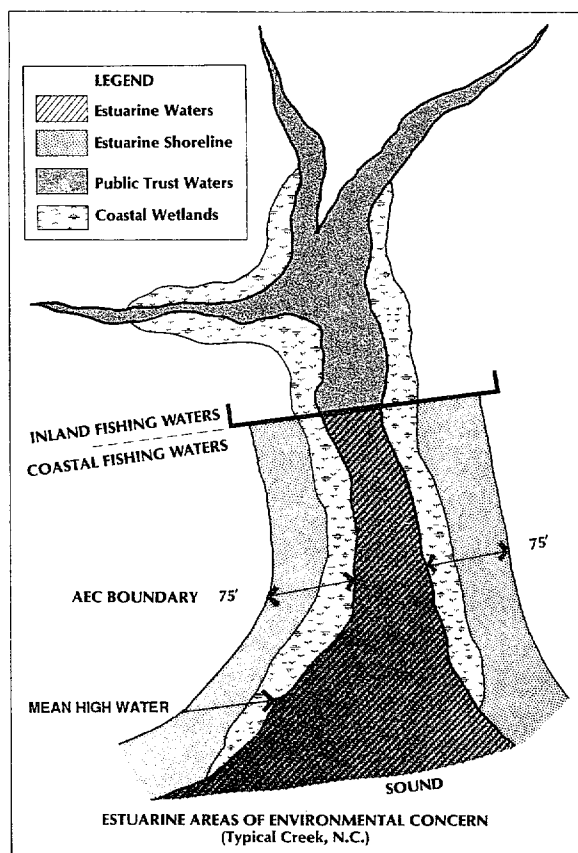


Figure 13. Estuarine System Areas of Environmental Concern.

patterns are caused by tidal energy, the mixtures of saltwater and freshwater flows, and shallow water depths. The circulation of estuarine waters transports nutrients and plankton, spreads young fish and shellfish, flushes plant and animal wastes, cleanses the system of pollutants, controls salinity, shifts sediments, and mixes the water to create a multitude of productive habitats. These habitats include nursery areas, mud and sand flats, salt marshes, submerged vegetation beds, and shellfish beds. The estuarine waters are also an important economic resource because they support boating, fishing, swimming, and other recreational activities. They also have considerable value for education and personal enjoyment.

The CAMA permit program gives highest priority to conserving the natural processes of estuarine waters. Second priority for the use of estuarine waters is given to "water-dependent"

activities that require use of and access to the water, and cannot function away from the water. Water-dependent uses include navigation channels, marinas, boat docks, piers, moorings, and erosion control structures.

Public Trust Areas

Public trust AECs cover waters and submerged lands in the coastal region where the public has rights of use and/or ownership, including rights of navigation and recreation. These areas support valuable commercial and recreational fisheries and are important resources for economic development. The following lands and waters are public trust areas:

- all waters of the Atlantic Ocean and the lands thereunder from the mean high water mark to the seaward limit of state jurisdiction;
- all natural bodies of water, and all lands thereunder, to the mean high water mark;
- all navigable natural bodies of water, and all lands thereunder, except privately-owned lakes to which the public has no right of access;
- all water in artificially-created bodies of water containing significant public fishing resources or other public resources which are accessible to the public by navigation from bodies of water in which the public has rights of navigation; and
- all waters in artificially-created bodies of water in which the public has acquired rights by prescription, custom, usage, dedication, or any other means.

These areas overlap with the estuarine waters AEC, but they also cover inland fishing waters that are not in the estuarine waters AEC.

Development in public trust areas must be properly managed in order to protect public rights for navigation and recreation, and to per-

petuate the biological and economic benefits these areas provide to the people of the state. Projects which would directly or indirectly block or impair existing navigation channels, increase shoreline erosion, deposit spoils below mean high tide, cause adverse water circulation patterns, violate water quality standards, or cause degradation of shellfish waters are generally considered incompatible with the management policies for public trust areas. The development of navigation channels or drainage ditches, the use of bulkheads to prevent erosion, and the building of piers, wharves, or marinas are examples of uses that may be acceptable within public trust areas, provided they will not

be detrimental to public trust rights and the ecological functions of the area.

Coastal Wetlands

The Coastal Area Management Act defines a coastal wetland as any marsh subject to regular or occasional flooding by lunar or wind tides. Freshwater swamps and inland wetlands are not covered by the Act, unless the CRC designates them as a "natural resource AEC." They are, however, protected by the Clean Water Act and a Corps of Engineers permit is required for work in them. Coastal wetlands contain some, but not necessarily all, of the following plant species (see Figure 14).

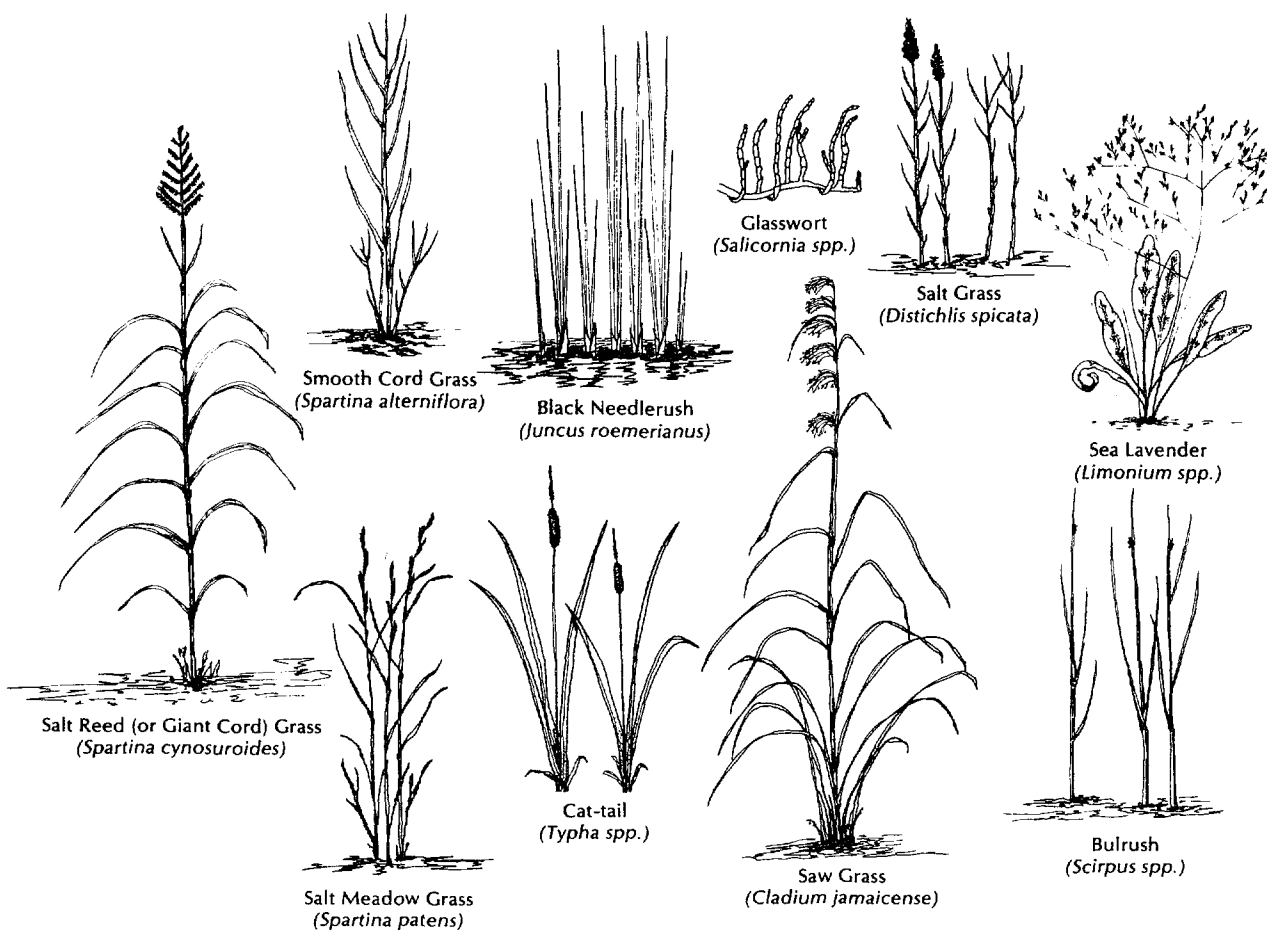


Figure 14. Plant species common to North Carolina's wetland areas.

Smooth Cord Grass (*Spartina alterniflora*)

Black Needlerush (*Juncus roemerianus*)

Glasswort (*Salicornia* spp.)

Salt Grass (*Distichlis spicata*)

Sea Lavender (*Limonium* spp.)

Bulrush (*Scirpus* spp.)

Saw Grass (*Cladium jamaicense*)

Cat-tail (*Typha* spp.)

Salt Meadow Grass (*Spartina patens*)

Salt Reed or Giant Cord Grass (*Spartina cynosuroides*)

The roots, stems, and seeds of marsh plants provide high quality feed and nesting materials for waterfowl and other wildlife. Plant leaves and stems also tend to dissipate waves while their extensive root systems bind soil; thus, marsh plants reduce the erosion of estuarine shorelines and help guard against flood damage. The unique productivity of the estuarine system is supported by the nutrients and decayed plant material (or detritus) that the marshes produce; these nutrients and detritus support marine life. The marsh also traps nutrients by slowing the water which flows over it. In this manner, the level of nutrients supporting life in the estuaries is maintained, and sediments harmful to marine animals are removed. Without coastal wetlands, the complex food chains and high productivity

levels typically found in the estuaries could not be maintained.

That productivity is of great importance to North Carolina's economy. Ninety-five percent of the commercial and recreational seafood species (including shrimp, flounder, oysters, crabs, and menhaden) depend on coastal wetlands for part of their lives.

Estuarine Shorelines

The CRC has designated as an AEC all shorelands within 75 feet landward of the mean high water level, or normal water level, of the estuarine waters (see Figure 13). Estuarine shorelines, though typically dry land, are an important part of the estuarine system because of their connection to the estuarine waters. Improper development along the estuarine shoreline can pollute or destroy adjacent waters and wetlands. Estuarine shorelines are also vulnerable to erosion, flooding, and other natural hazards found in the estuarine system.

Development along estuarine shorelines must not damage these natural barriers to erosion, nor should development harm documented historic architectural or archaeological resources. It is also important for construction projects to avoid causing sedimentation of estuarine waters, and to avoid covering the shoreline within impervious surfaces. Buffers of natural vegetation between the shorelines and development provide additional protection for estuarine resources.

General Standards

Estuarine Shoreline AEC

Estuarine shorelines have a direct effect on the quality of adjacent estuarine waters and habitats. As the dynamic meeting point of the land and water, they are also subject to damage from flooding and erosion. They provide a buffer between development and the estuarine waters – a buffer that can keep sediments and pollutants from contaminating estuarine habitats and protect development from erosion.

The Coastal Resources Commission has adopted use standards for development along estuarine shorelines. These standards apply within 75 feet of the mean high water line. They are designed to minimize the effects of development on the natural functions of the estuarine system and recognize the dynamic and hazardous nature of the shoreline itself. Any project along the estuarine shoreline that requires a CAMA permit must meet the following standards (which are officially stated in Title 15, Subchapter 7H, Section .0209 of the N.C. Administrative Code) before a minor or major development permit can be issued.

Development shall not cause significant damage to estuarine resources.

Development shall not interfere with existing public rights of access to, or use of, navigable waters or public resources.

All development projects shall preserve and not weaken natural barriers to erosion, including (but not limited to) peat marshland, resistant clay shorelines, and cypress-gum fringe areas.

Certain soil formations and plant communities along estuarine shorelines help slow erosion. Peat marshlands and cypress-gum communities have dense vegetation and root systems which hold soil in place. Clay soils, being denser and more cohesive, are less susceptible to erosion than loose, sandy soils.

Since these areas are natural barriers to erosion, they help protect human structures located along the shoreline.

No major facility paid for in any part by public funds shall be permitted if it is likely to require extraordinary public expenditures for maintenance and continued use, unless the public purpose served by the project outweighs the required public expenditures.

The use of public funds to finance the construction and maintenance of buildings, erosion control projects, and other structures can be futile if the projects are subject to repeated damage by erosion and flooding. In some cases, the level of protection or other benefits these structures provide does not justify the amount of money spent to build and maintain them.

Impervious surfaces shall not exceed 30 percent of the lot area located within the AEC, unless such a limitation will allow no practical use to be made of the lot or the applicant can prove that the project's design can protect natural drainage as well as the 30 percent coverage limit. All development projects shall limit the construction of impervious surfaces, and other areas prohibiting natural drainage, to only the area necessary to adequately serve the major use of the lot (see Figure 15).

Impervious surfaces along the estuarine shoreline (such as parking lots, driveways, and patios) keep rainwater from seeping into the ground. Significant shoreline erosion can result as rainwater runs off the paved surface, across the bank, and into the estuarine waters. This runoff can also carry sediments and pollutants from the pavement into the estuarine waters.

All development projects shall meet the standards of the N.C. Sedimentation Pollution Control Act of 1973.

Certain provisions of the Sedimentation Pollution Control Act (G.S. 113A-57), which are described below, directly address construction along the estuarine shoreline.

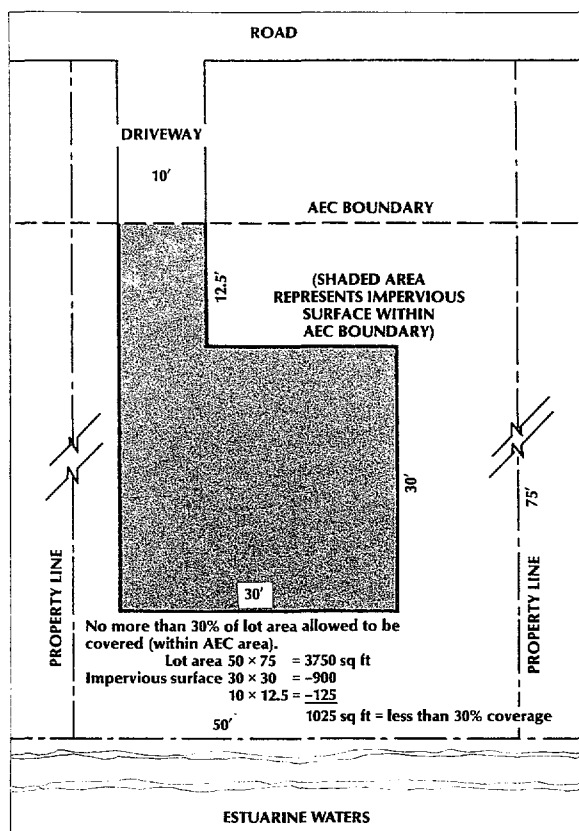


Figure 15. Example of the maximum impervious surface allowed to cover a lot located within the Estuarine Shoreline AEC.

1. All projects which disturb more than one acre of land must plant a ground cover sufficient to restrain erosion within 30 working days of final grading.
2. All projects must provide a buffer zone along the water which will confine visible siltation to the 25 percent of the buffer zone nearest to any land-disturbing activity.
3. No project shall include an angle for graded slopes or fill greater than an angle which can be obtained by vegetative cover or other erosion control devices.

All development projects shall meet the stormwater management rules of the Environmental Management Commission.

Development shall not cause major or irreversible damage to valuable, documented historic architectural or archaeological resources.

There are numerous sites along the coast containing significant cultural resources that need to be protected. Historic architectural structures provide examples of important architectural styles and/or a legacy of people who have played an important role in the coastal region's history. Archaeological resources (such as the remains of Indian settlements, shipwrecks, and Civil or Revolutionary War artifacts) provide valuable information on the history of the coastal region and its people. These resources need protection, not only for historical and archaeological research, but also as lasting symbols of the coastal region's heritage. Information on the location of valuable historic architectural or archaeological sites can be obtained from the Division of Archives and History in the Department of Cultural Resources. (See appendices for address and phone number.)

The project must comply with the local land use plan.

Each of the coastal region's 20 counties and nearly all of its incorporated towns have adopted local land use plans under the Coastal Area Management Act. A local land use plan contains the goals citizens have established for their community, a set of policies that the community will use to manage development to reach these goals, and a map classifying lands in the community according to the types of development that should occur on them. The Act requires that projects that receive CAMA permits comply with the local land use plan. If the local land use plan does not allow a certain type of development within the land classification where it is proposed, a CAMA permit cannot be issued.

Exemptions

The Coastal Resources Commission does not require a **minor development permit** for single-family residences built within the estuarine shoreline AEC which are more than 40 feet from the mean high water mark, or normal water level. To receive this exemption, no land-disturb-

ing activities may take place between the house and the 40-foot buffer; an accessway from the house to the water may be built as long as it is no wider than six feet. In eroding areas, this exemption applies only when the local permit officer believes the house is located the maximum feasible distance on the lot (but no less than 40 feet) from the shoreline. In all cases, the building must meet all other applicable CAMA permit standards and comply with all applicable local land use plans and regulations. Before beginning any work under this exemption, you must notify the DCM field representative of the dimensions of the building, its location, and the landowner's name, address, and telephone number. This exemption is officially stated in Title 15, Subchapter 7K, Section .0309 of the N.C. Administrative Code.

The Coastal Resources Commission has also exempted from the minor development permit requirement certain work in the estuarine shoreline AEC to maintain, repair, or construct some private bulkheads with backfill, to place riprap along shorelines, and to construct piers and moorings in the coastal waters. Anyone proposing such a project should first check with the DCM field representative or the local permit officer to find out what conditions must be met in order to qualify for the exemption. The exemption **does not apply** to commercial properties or multi-unit residential properties. This exemption is officially stated in Title 15, Subchapter 7K, Section .0307 of the N.C. Administrative Code.

Coastal Wetlands, Estuarine Waters, and Public Trust AECs

Coastal wetlands provide vital habitats for coastal wildlife. They protect water quality by trapping sediments and pollutants. They reduce flooding and shoreline erosion. They produce nutrients and decayed plant material that feed marine life. Shrimp, oysters, crabs, flounder, menhaden, and other fishes depend on coastal wetlands as nursery areas, protective shelters, and sources of food. People harvest various

products of the wetlands when fishing, hunting, and gathering shellfish from the sounds and the ocean.

Estuarine waters transport nutrients and plankton, control salinity, and cleanse the estuarine system of pollutants. They support a multitude of productive habitats, such as mud flats, submerged vegetation beds, shellfish beds, and spawning areas. The estuarine waters also support boating, swimming, hunting, fishing, and other human activities.

Public trust areas support the public's free use of waterways for navigation and recreation. They cover all lands underneath these waterways and the minerals and biological resources that these submerged lands contain.

The Coastal Resources Commission has adopted general use standards for development within coastal wetlands, estuarine waters, and public trust areas. These standards protect the natural productivity and continued human use of these valuable resources. Any project in a coastal wetland, estuarine waters, or public trust AEC that requires a CAMA permit must meet the following standards (which are officially stated in Title 15, Subchapter 7H, Section .0208(a) of the N.C. Administrative Code) before a minor development permit or major development permit can be granted.

Only "water-dependent" uses will be permitted in coastal wetlands, estuarine waters, and public trust areas.

"Water-dependent" projects include navigation channels, dredging projects, docks, piers, bulkheads, boat ramps, groins, and bridges. Since these projects must be located near or in water to accomplish their intended purpose, they are allowed in coastal wetlands, estuarine waters, and public trust areas if they meet all development standards. Projects that are not water-dependent, such as restaurants, homes, motels, stores, factories, roads, and parking lots, should be placed elsewhere – preferably in upland areas. There is no need

to place them in wetlands, estuarine waters, or public trust areas where they can cause needless damage to public resources.

The location, design, and construction of a project must: (1) give highest priority to the conservation of coastal wetlands, estuarine waters, and the resources in public trust areas to safeguard and perpetuate their biological, economic, and social values; and (2) protect public rights of navigation and recreation in public trust areas.

The site and design of the project shall cause the least possible damage to the productivity and integrity of coastal wetlands, shellfish beds, submerged grass beds, spawning and nursery areas, important nesting and wintering areas for waterfowl and other wildlife, and important natural barriers to erosion (marshes, cypress fringes, clay soils).

A development project in or near an estuary should avoid these locations to the greatest extent possible. When these locations cannot be avoided, the project should be designed to have the least possible impact on these important resources.

The project must not violate the water quality standards and air quality standards established by North Carolina's Environmental Management Commission.

Information on these standards can be obtained from the Division of Environmental Management in the Department of Natural Resources and Community Development. (See appendices for address and phone number.) Generally, development that would lower water quality to the degree that any existing uses of the water (shellfishing, swimming, or drinking) would be lost cannot be permitted.

The project must not measurably increase siltation.

Sediment from development projects can be easily washed into wetlands and estuarine waters, smother important habitats, block sunlight from reaching marine plants, and choke

fish and shellfish.

The project must not create a stagnant body of water.

Bodies of water that are not adequately flushed by currents accumulate sediments and pollutants. They present a threat not only to fish and shellfish habitats, but also to public health.

Work on the project must be timed to have the minimum adverse impact on the life cycles and migration patterns of fishes, shellfish, waterfowl, and other wildlife.

The life cycles of animals that depend on the estuarine system are especially sensitive during certain seasons of the year. Information on the seasons to avoid in carrying out a development project can be obtained from DCM, the Division of Marine Fisheries, and the Wildlife Resources Commission. (See appendices for addresses and phone numbers.)

The project must not cause major or irreversible damage to valuable archaeological or historic resources.

Information on the location of valuable archaeological and historic resources can be obtained from the Division of Archives and History in the Department of Cultural Resources. (See appendices for address and phone number.)

The project must not impede navigation or interfere with public access to, or use of, the estuarine waters and public trust lands and waters.

The project must comply with the local land use plan.

Each of the coastal region's 20 counties and nearly all of its incorporated towns have adopted local land use plans under the Coastal Area Management Act. A local land use plan contains the goals citizens have for their community, a set of policies that the community will use to manage development to reach these goals, and a map classifying lands in the community according to the types of

development that should occur on them. The Act requires that projects receiving CAMA permits comply with the local land use plan. If the local land use plan does not allow a certain type of development within the land classification where it is proposed, a CAMA permit cannot be issued for that project.

Exemption

The Coastal Resources Commission does not require a minor development permit for certain work in a public trust AEC to maintain, repair, or construct some private bulkheads with back-fill, to place riprap along shorelines, and to construct piers and moorings in the coastal waters. Anyone proposing such a project should first check with the DCM field representative or the local permit officer to see what conditions must be met in order to qualify for the exemption. The exemption does not apply to commercial properties or multi-unit residential properties. This exemption is officially stated in Title 15, Subchapter 7K, Section .0307 of the N.C. Administrative Code.

Specific Standards

Hydraulic Dredging

Hydraulic dredging is used to construct and maintain navigation channels and boat basins, allowing boats to safely use coastal waters. A key concern with hydraulic dredging is the disposal of dredge spoil. Unless it is placed in a proper location, in a proper manner, spoil material can smother coastal wetlands, shellfish beds, and fish spawning and nursery areas. In addition, dredge spoil can release pollutants into estuarine waters unless it is deposited at a properly designed site.

To receive a CAMA permit, hydraulic dredging projects must meet specific standards in addition to the general use standards for coastal wetlands, estuarine waters, and public trust areas. These standards (which are officially stated in Title 15, Subchapter 7H, Section .0208(b)(2) of the N.C. Administrative Code) are described below.

Dredge spoil must be either confined on high ground by adequate retaining structures or, if the dredged material is suitable, deposited on ocean beaches as sand renourishment. Excavated materials confined on high ground must be placed landward of any marshland and must be adequately stabilized to keep sediments from entering adjacent waters or wetlands.

These standards keep dredge spoil from being deposited in wetlands or underwater, where sediments could cover valuable habitats, cloud the water to keep light from reaching submerged vegetation, and choke fish and shellfish.

The end of the dredge pipeline should be positioned within the spoil disposal area at: (1) a distance sufficient to keep the containment dike from eroding; and (2) a maximum distance from spillways to allow suspended sediments to settle evenly throughout the disposal area (see Figure 16(A)).

Effluent from a diked spoil disposal area must be carried by a pipe, trough, or similar device to a point waterward of emergent vegetation or below the mean low water line. When possible, the effluent must be returned to the area being dredged (see Figure 16(B)).

A water control structure must be installed at the intake end of the effluent pipe to restrict the flow of sediment and stormwater runoff into adjacent marshes and waterways (see Figure 16(C)).

Dredge spoil from closed shellfish waters, and effluent from diked disposal areas holding spoil from closed shellfish waters, must be returned to closed shellfish waters.

This standard keeps the contaminants found in closed shellfish beds from reaching non-polluted shellfish beds, spawning and nursery areas, and submerged vegetation beds.

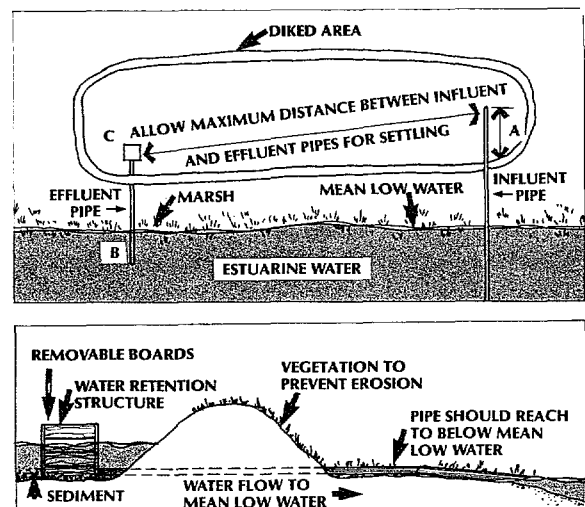


Figure 16. Diagram of dredge spoil disposal site.

Navigation Channels, Canals, and Boat Basins

Navigation channels, canals, and boat basins are common in and along the coast's many broad sounds and rivers. These projects enhance use of the state's coastal waters by the public for recreational boating, commercial fishing, and other activities. However, these projects can cause serious problems unless they are properly designed and located. They can disturb important shellfish beds and fish nursery areas and damage wetlands, hindering their ability to reduce erosion and support wildlife and fisheries. They can also stimulate shoreline erosion by altering water circulation patterns.

The CRC's standards for navigation channels, canals, and boat basins are designed to help avoid these problems and to protect the many values of coastal wetlands, estuarine waters, and public trust areas. Navigation channels, canals, and boat basins must meet the specific standards in addition to the general use standards for coastal wetlands, estuarine waters, and public trust areas. These standards (which are officially stated in Title 15, Subchapter 7H, Section .0208(b)(1) of the N.C. Administrative Code) are listed below.

Navigation channels, canals, and boat basins must be aligned or located so as to avoid primary nursery areas, highly productive shellfish beds, submerged vegetation beds, and marshes.

The Division of Coastal Management's field representative can tell you where these areas are and how to design a project to avoid them.

Navigation channels and canals can be allowed through narrow fringes of regularly and irregularly flooded coastal wetlands if the loss of wetlands will cause no significant damage to fishery resources, water quality, or adjacent wetlands and if there is no reasonable alternative that would prevent losing the wetland.

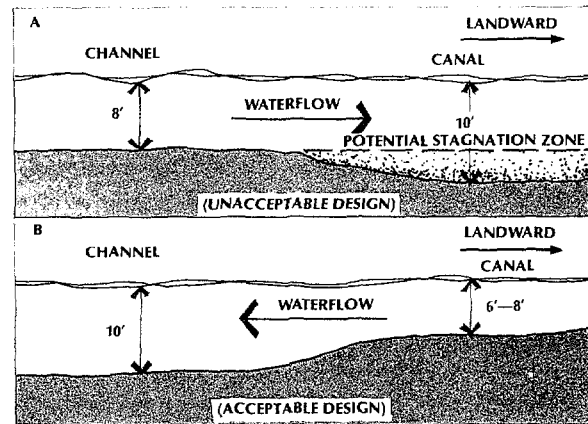


Figure 17. Depth of boat basins should decrease from waterward end to landward end.

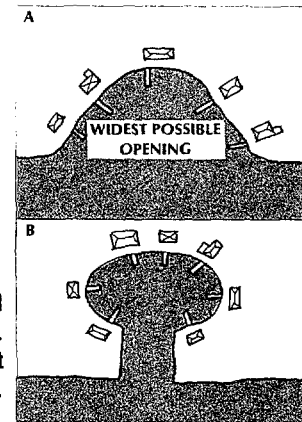


Figure 18. (A) Preferred boat basin design. (B) Less-preferred boat basin design.

The width of a canal or channel must be the minimum required to meet the applicant's needs and to provide adequate water circulation.

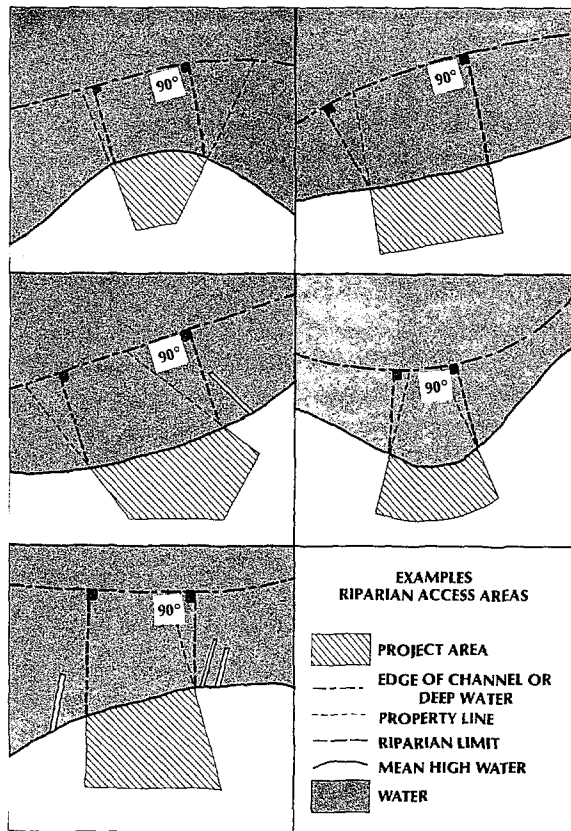
Canals may not be constructed in a manner that will cause water quality problems.

This standard ensures that any canal that is constructed will have freely flowing water, with no areas where water can stagnate and concentrate pollutants.

Canals should not stimulate shoreline erosion on adjoining properties; their design may include bulkheading, stabilized vegetation, or setbacks based on soil characteristics.

Unless properly designed and located, navigation channels and canals can alter water currents and cause adjoining properties to erode more easily and quickly.

Shorelines along canals serving more than one residence may not contain septic tanks



Figures 19. Examples of riparian access areas. Riparian area limit is figured at a 90° angle from the edge of the channel (or deep water), back to the property line on shore.

(unless they meet standards set by the Division of Environmental Management and the Division of Health Services), or treated or untreated point source discharges of pollutants. They must have areas, such as grassed swales and settling basins, for routing and retaining stormwater runoff.

This standard minimizes the discharge of sewage and other pollutants into canals, where water moves slowly and has a lower capacity to safely dissipate harmful materials.

No canal or boat basin may be dug deeper than the channels to which they are connected.

If canals or boat basins are dug deeper than other channels, water currents will carry sediments and pollutants into the canal or basin instead of flushing them out.

Boat basins should be designed with the widest possible opening and the shortest possible entrance canal to promote maximum flushing and exchange of waters. The depth of a boat basin should decrease from the waterward end to the landward end (see Figures 17 and 18).

All spoil material from the construction of a canal, channel, or basin must be confined landward of regularly or irregularly flooded coastal wetlands and stabilized to prevent sediment from entering adjacent marshes or waterways.

If sediment is allowed to wash into or be deposited in marshes and coastal waters, it can cover valuable habitats, cloud the water to keep light from reaching submerged vegetation, and choke fish and shellfish.

Spoil from the maintenance of a channel or canal through irregularly flooded wetlands must be placed on non-wetland areas, remnant spoil piles, or disposed of by an acceptable method having no significant, long-term impact on the wetlands. Under no circumstances may spoil be placed on regularly flooded wetlands.

Docks and Piers

Docks and piers are essential to enjoying life along the coast. Piers allow people to reach water that is deep enough for boating, swimming, diving, and fishing. Docks provide waterfront property owners with a place to tie up, load, and unload boats. However, if piers and docks are poorly designed, they can obstruct navigation and the water circulation that sustains the estuary's natural systems.

Docks and piers must meet the specific standards in addition to the general use standards for coastal wetlands, estuarine waters, and public trust areas. These standards (which are officially stated in Title 15, Subchapter 7H, Section .0208(b)(6) of the N.C. Administrative Code) are described below.

Piers must be designed to reduce obstacles to navigation and public use of the waters.

The waters of the estuarine system belong to all the people of the state, who have a right to use and enjoy them. A pier that presents a threat to safe navigation or obstructs free use of the waters denies the public this right.

Piers must not interfere with access to any riparian property. All parts of a pier must be set back at least 15 feet from adjacent property lines, extended to the channel from the shoreline (see Figure 19).

Setting piers back from the property line allows other boats room to maneuver and to reach adjacent waterfront properties. The 15-foot setback requirement may be waived by the written agreement of the adjacent riparian property owners or when adjoining owners are applying for the CAMA permit together.

Docks and piers shall not significantly interfere with shellfish leases or franchises. An applicant wishing to construct a dock or pier shall provide notice of the permit application or exemption request to the owner of any part of a shellfish franchise or lease over which the proposed dock or pier would extend.

Some of the bottomlands of the state's sounds and tidal rivers contain shellfish beds that are subject to franchises and leases conveyed by the state to individuals who harvest and maintain the beds. The construction of piers or docks could damage shellfish beds unless they are properly designed and located. Information on the location of these shellfish beds and leaseholders can be obtained from the Division of Marine Fisheries. (See appendices for address and phone number.)

Piers must not extend beyond the length of existing piers that are used for similar purposes along the same shoreline. In no case may a pier extend more than one-third of the way across a natural water body or man-made canal or basin (see Figure 20).

Piers that extend too far into a waterway can

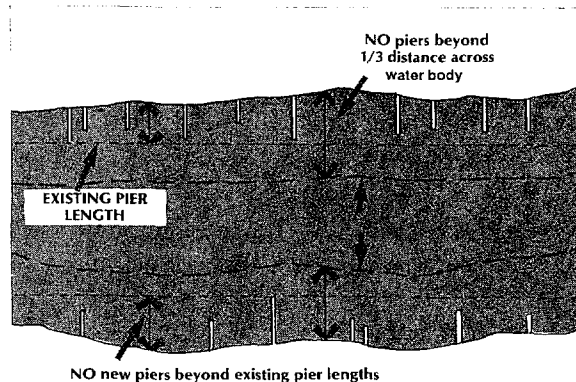


Figure 20. Allowable pier lengths.

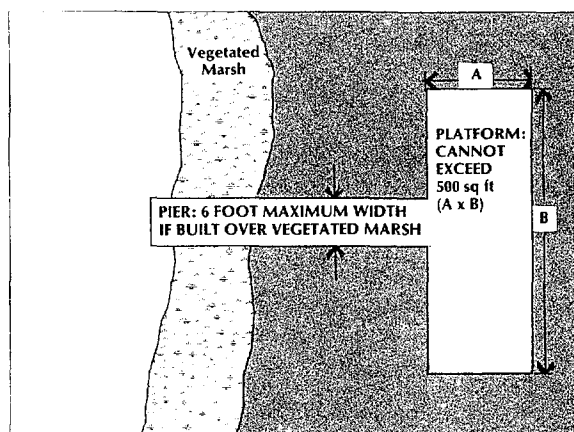


Figure 21. Example of dock size requirements.

obstruct safe navigation and free use of the public waters.

Pier alignments along federally maintained channels must meet the U.S. Army Corps of Engineers' guidelines.

Information on the location of federally maintained channels and federal pier alignment guidelines can be obtained from the Corps' district office in Wilmington. (See appendices for address and telephone number.)

Docks and piers must not significantly interfere with water flows.

Docks and piers that obstruct or alter the circulation of estuarine waters can cause pollutants to accumulate along the shoreline and can stimulate shoreline erosion on nearby

lands. Building a dock or pier on openly-spaced pilings allows water to circulate freely.

Docks and piers that are built over vegetated marsh must not exceed six feet in width. "T's" or platforms over water and at the end of a pier are not restricted to this dimension but cannot have a total area exceeding 500 square feet (see Figure 21). Also, the platform cannot extend more than six feet over any marsh.

Piers and docks keep sunlight from reaching marsh vegetation and thus slow plant growth. Keeping platforms at the end of piers to a smaller size minimizes the shading of submerged grass beds and reduces obstructions to navigation and free use of the public waters.

Bulkheads and Shoreline Stabilization Measures

Shoreline erosion is common along North Carolina's broad sounds and tidal rivers where the land meets waves and water currents. Coastal soils are easily displaced as rising sea level slowly encroaches on higher ground. Many waterfront property owners look for methods to slow or prevent this encroachment. The table on the next page outlines factors of cost, effectiveness, and impacts to the environment of various

control measures. The Division of Coastal Management recommends estuarine shoreline erosion control measures in the following order of preference:

- vegetation planting
- stone riprap or other sloping revetments
- bulkheads or vertical seawalls

Because of the variety of shoreline types and plant species in North Carolina estuaries, each site must be evaluated for the appropriateness of planting and the "how-to" details. The table indicates which types of sites are appropriate for planting. For details of how to plant, see Sea Grant Publication UNC-SG-81-09.

If riprap is chosen, the material must be sufficiently heavy or securely tied down to remain in place through storms and normal tidal and wave movement. In freshwater habitats, riprap areas can provide additional stabilization by planting vegetation in the spaces between stone using soil bioengineering techniques (live stakes). If bulkheads are chosen, they must be properly located and designed so that they do not encroach into coastal wetlands, estuarine waters, or public trust areas.

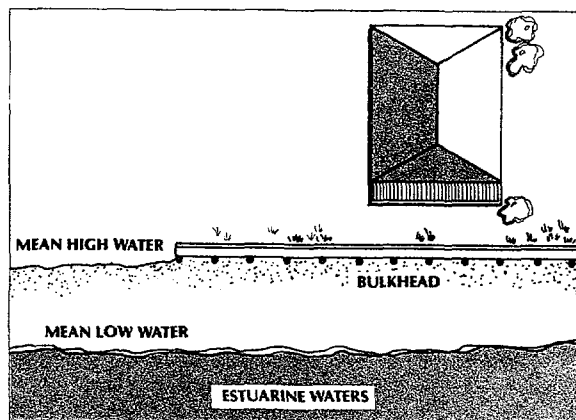


Figure 22. Example of bulkhead alignment with mean high water.

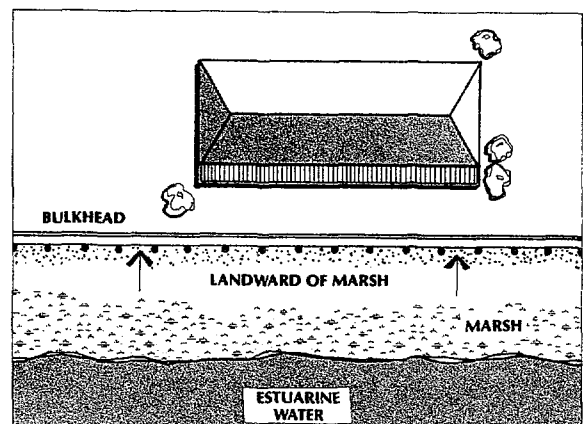


Figure 23. Example of proper bulkhead alignment near marsh areas.

Comparison of Estuarine Shoreline Stabilization Measures

	Vegetative Planting	Stone Riprap or Revetment	Bulkhead or Vertical Seawall
Cost	\$35-40 per linear foot	\$75-125 per linear foot	\$100 per linear foot
Effectiveness	Damps wave energy. Can cause vertical and seaward accretion by trapping sediments. Vertical accretion allows marsh to migrate ahead of rising sea level.	Somewhat dissipates wave energy. Causes some increase in erosion in front of and adjacent to revetment. Rocks will settle and readjust with storm and wave action.	Blocks and reflects wave energy. Causes increased erosion in front of and adjacent to the structure. Scouring in front of the structure and storm action will eventually result in catastrophic failure.
Effects on habitat, flora, and fauna	Increases marsh habitat and is of value for lower food chain organisms, juvenile finfish and shellfish, and a variety of mammals and shorebirds.	Less initial habitat destruction and loss than for bulkheads. Replaces soft bottom substrate habitat with hard substrate – changing floral and faunal community structure, diversity, and abundance. Some increase in erosion front of adjacent to revetment, with accompanying loss of important beach, marsh, seagrass bed, and tidal flat habitats.	Initial habitat impacts include shoreline transition zone, and construction impacts, such as increased sedimentation increased erosion in front of the structure destroys the important beach, marsh, seagrass bed, and tidal flat habitats. Soft bottom habitats replaced by hard substrate habitat – changing floral and faunal community structure, diversity, and abundance. Less habitat available than riprap over the long term. Bulkheads block the natural migration of marsh and other intertidal and shallow habitats ahead of sea level rise, resulting in the "drowning" and elimination of these habitats.

A permit is not required to plant on shorelines that require no preparation. For larger projects, areas that need site alteration/preparation, and advice, contact a DCM field representative in the field office nearest you.

Bulkheads and other shoreline stabilization methods must meet the specific standards in addition to the general use standards for coastal wetlands, estuarine waters, and public trust areas. These standards (which are officially stated in Title 15, Subchapter 7H, Section .0208(b)(7) of the N.C. Administrative Code) are outlined below.

Bulkhead alignment must approximate the mean high water or normal water level (see Figure 22).

The mean high water or normal water level is the boundary between private property and the lands and waters held by the state in the public trust. Bulkheads located waterward of this line encroach on the public's right of access to those lands and waters. In addition, bulkheads located below the mean high water or normal water line are more susceptible to damage from waves and water currents; they can also alter water circulation patterns to stimulate erosion elsewhere along the shoreline.

Bulkheads or other shoreline stabilization structures may be permitted below the mean high water or normal water level only when all of the conditions described below are met.

1. The property is not on the oceanfront.
2. The property has an identifiable erosion problem or has unusual features (such as a steep bank) which would cause the permit applicant undue hardship under the other bulkhead standards.
3. The need for a bulkhead below the mean high water or normal water line is documented in the field investigation report or other reports prepared by the Division of Coastal Management.
4. The bulkhead extends no further beyond the mean high water or normal water line than necessary to: (a) mitigate the un-

reasonable hardship resulting from unusual features; (b) align with adjacent bulkheads; and (c) allow recovery of the area eroded in the year prior to the date of application.

5. The bulkhead will not cause significant damage to public trust rights or to adjacent waterfront properties.

Bulkheads must be constructed landward of significant marsh areas (see Figure 23).

Wetlands are vital to the health and productivity of fish and shellfish populations; they depend on regular flooding by the tides for nutrients and for carrying away sediments and pollutants. Bulkheads constructed within a marsh block this essential exchange and stimulate the gradual sedimentation of the state's coastal wetlands.

Bulkhead fill material must be obtained from an approved upland source. If the bulkhead is part of a permitted project involving excavation from a non-upland source, the excavated material may be contained behind the bulkhead.

People often place fill behind a bulkhead to compensate for past erosion and stabilize the shoreline. Requiring this fill to come from an approved upland site ensures that people will not dig up the state's wetlands, estuarine beaches, and sound and river bottoms to get the fill material they need.

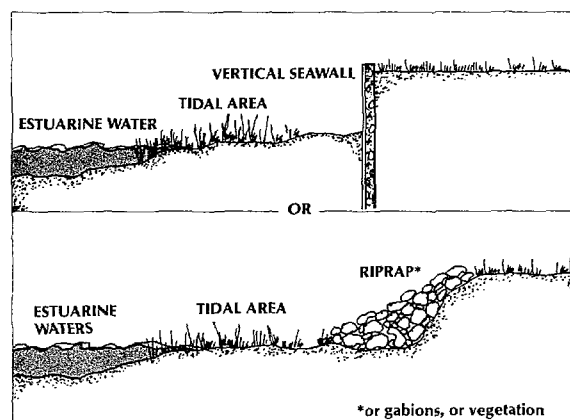


Figure 24. Forms of estuarine shoreline erosion control.

Where possible, sloping riprap, gabions, or vegetation may be used rather than vertical seawalls (see Figure 24).

Riprap, gabions, and vegetation can be less expensive and more effective at impeding erosion than vertical seawalls, depending on the characteristics of a particular shoreline. Sloping shoreline structures help dissipate wave energy as a wave strikes the shoreline, thus reducing the wave's ability to carry away soil. Vertical seawalls do not dissipate wave energy as well; they can even direct it to adjacent properties and to the base of the bulkhead itself, causing additional erosion and damage to the bulkhead.

Exemptions

The Coastal Resources Commission does not require a **major development permit** for certain bulkheading projects in an estuarine system AEC that a property owner proposes to prevent property loss due to erosion. To qualify for this exemption, the bulkhead must meet all of the following conditions:

- it is needed to prevent a loss of private, residential property due to erosion;
- it is positioned no more than an average of two feet waterward of the mean high water line, and at no point more than five feet waterward of the mean high water line;
- its shoreline length does not exceed 200 feet;
- it is built prior to any backfilling;
- it is structurally tight, so as to prevent the seepage of backfill material;
- backfill comes from an upland source; and
- no marsh is excavated or filled.

This exemption is officially stated in Title 15, Subchapter 7K, Section .0203 of the N.C. Administrative Code.

Wooden and Riprap Groins

Groins are wall-like structures built out into the water from the shoreline in order to provide limited protection from gradual erosion by interrupting water currents and trapping sand. Wooden and riprap groins are frequently used on a small scale along the shores of North Carolina's sounds and tidal rivers to protect individual properties. The effectiveness of these groins at reducing erosion is limited: while they do trap sand under normal conditions, they also stimulate the erosion of adjacent shorelines and provide little protection from erosion during a major storm. In addition, the construction of a groin could create a threat to navigation and water quality unless it is properly designed and located. The Coastal Resources Commission has developed standards for the construction of groins to reduce these problems.

To receive a CAMA permit, wooden and riprap groin projects must meet specific standards in addition to the general use standards for

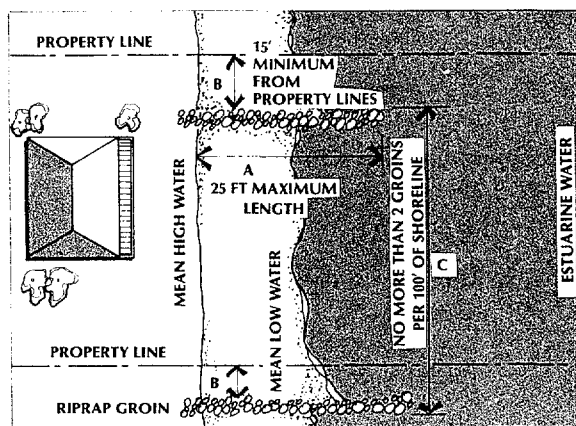


Figure 25. (A) (B) (C). Location of groins along estuarine waters.

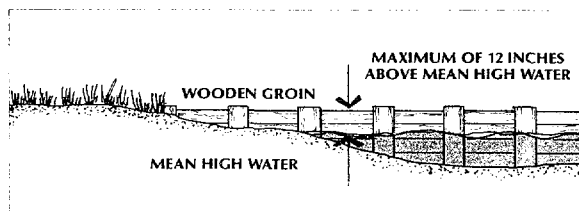


Figure 26. Allowable height of groins along estuarine waters.

coastal wetlands, estuarine waters, and public trust areas. These standards (which are officially stated in Title 15, Subchapter 7H, Section .0208(a)(9) of the N.C. Administrative Code) are explained below.

Groins must pose no threat to navigation.

Any structure jutting out from the shoreline presents a potential hazard to boaters and the free use of the public waters. Groins should not interfere with boat traffic.

Groins must not extend more than 25 feet waterward of the mean high water level (or normal water level) unless a longer structure can be justified by site-specific conditions and sound engineering and design principles (see Figure 25(A)).

Groins must be set back at least 15 feet from the adjoining property lines, extended to the channel from the shoreline (see Figure 25(B)).

Setting groins back from the property line allows boats room to maneuver and to reach adjacent waterfront properties. The 15-foot setback requirement may be waived by the written agreement of the adjacent riparian owners or when adjoining owners are applying for the CAMA permit together.

No more than two groins will be allowed per 100 feet of shoreline unless the applicant can provide evidence that more structures are needed for shoreline stabilization (see Figure 25(C)).

It is a general rule of thumb in coastal engineering that groins should be set apart a distance at least four times their length in order to interrupt water currents and trap sand. Since the standards generally limit groins to a length of 25 feet, they should be spaced at least 100 feet apart.

The height of a groin must not exceed one foot above the mean high water level or normal water level (see Figure 26).

If a groin is built too high above the water level, storm waves will not wash over it and

could cause it to collapse.

"L" and "T" sections are not allowed at the end of groins.

"L" and "T" sections do not add to the groin's effectiveness in trapping sand. They can impede navigation and cause pollutants and debris to accumulate within the corner of the groin.

Riprap material used to build a groin must be free from harmful quantities of loose dirt and other pollutants and must be large enough to keep from being carried away by waves or currents.

Loose sediment and pollutants can be easily washed from a riprap groin into coastal waters where they can harm aquatic plants and animals. The riprap itself, unless the stones are large enough, can be carried away by storm waves and currents to litter adjacent shorelines and present a hazard to boats in shallow water.

Marinas

Marinas provide the boating public with a variety of valuable services such as fuel, repairs, docking, and storage. The construction and maintenance of a marina can involve significant alteration of shorelines and wetlands and the dredging of underwater habitats. Unless a marina is properly located and designed, it can damage important estuarine habitats and degrade the quality of estuarine waters.

To receive a CAMA permit, marinas must meet specific standards (which are officially stated in Title 15, Subchapter 7H, Section .0208(b)(5) of the N.C. Administrative Code), in addition to the general use standards for coastal wetlands, estuarine waters, and public trust areas. The specific standards cited below apply to any publicly or privately owned dock, basin, or boat storage facility built to accommodate more than 10 boats and provide permanent or temporary docking space, dry stack storage, haul-out facilities, and repair services. An exemption to the standards are boat ramps which

only allow access to the water and have none of the above services.

Marinas should be built on non-wetland sites or in deep waters not requiring dredging. They should not disturb valuable shallow water and wetland habitats, except for dredging necessary for access to high-ground sites. The following four alternatives for siting marinas are ranked in order of preference. Marinas must be designed to meet the highest priority that is feasible.

1. An upland site requiring no alteration of wetlands or other estuarine habitats and having adequate water circulation to prevent the accumulation of sediment and pollutants in boat basins and channels.
2. An upland site requiring dredging only for access when it will cause no significant damage to fisheries or wetlands.
3. A deepwater site that is not a "primary nursery area" and that does not require excavation or wetland alteration.
4. An open water site requiring the excavation of relatively unproductive areas to a depth no greater than the depth of any connecting channels.

Marinas which require dredging must not be located in "primary nursery areas," nor in areas which require dredging a channel through "primary nursery areas" for access to deeper waters.

"Primary nursery areas" are breeding grounds for important fish and shellfish species. These areas are identified and mapped by the N.C. Division of Marine Fisheries, which will upon request provide permit applicants with information on their location. (See appendices for address and telephone number.) Maintenance dredging in primary nursery areas for existing marinas will be considered on a case-by-case basis.

Marinas which require dredging shall provide spoil disposal areas adequate to accommodate future maintenance dredging.

Marinas must not be enclosed within breakwaters that hinder the water circulation needed to maintain water quality.

Breakwaters that obstruct or alter the circulation of estuarine waters can cause sediment and pollutants to accumulate at the marina and can stimulate shoreline erosion on nearby lands. They not only threaten marine life and public health, but also create the need for more frequent maintenance dredging.

Marinas should minimize encroachments into public waters by having a mixture of dry storage areas, public launching facilities, and berthing spaces.

Marinas must be designed to avoid creating obstacles to navigation and public use of the waters.

The waters of the estuarine system belong to all the people of the state, and they have a right to use and enjoy them. A marina that presents a threat to safe navigation or obstructs free use of the waters denies the public this right.

Marinas should use all measures necessary to minimize damage to natural systems from pollutants released while operating the marina and its maintenance vessels.

Pollutants such as grease, oil, paint, and sediments can be easily washed or flushed into the estuarine waters from fuel areas, parking lots, repair yards, boat decks, and bilges. Such devices as grease and sediment traps for stormwater runoff can protect water quality at the marina and throughout the estuarine system.

Marinas must prominently display a sign showing the location of the nearest pump-out facility, including the telephone numbers of local septic tank pumping services and other appropriate waste disposal information.

Sewage from boats can degrade the quality of waters at the marina and elsewhere in the estuarine system. Since sewage can accumulate in boat basins and areas where water circu-

lates slowly and present a threat to marine life and public health, human waste from boats is better disposed of on land at appropriate sites. If a marina includes a substantial number of boats or is in a critical area, permit conditions to require installation of pumpout facilities may be imposed. Generally, no discharges from boats are allowed in marinas.

Drainage Ditches

Drainage ditches are used throughout North Carolina's coastal region to lower the water table on a particular piece of land so it can be safely built upon or cultivated. Drainage ditches are also used to dry out areas where mosquitoes breed. The ditches play a part in making some areas more enjoyable and more livable. However, drainage ditches can cause a lot of damage to coastal resources. They can alter the flow of water through productive marshlands and disturb the natural balance there. They can create stagnant bodies of water where sediments, pollutants, and vermin accumulate. They can introduce sediment into adjacent estuarine waters that can smother valuable habitats, cloud the water to keep light from reaching submerged vegetation, and choke fish and shellfish.

The Coastal Resources Commission's standards for drainage ditches and nonagricultural drainage are designed to lessen these problems. Drainage ditches must meet the specific standards listed below as well as the general use standards for coastal wetlands, estuarine waters, and public trust areas (which are officially stated in Title 15, Subchapter 7H, Section .0208(b)(3) and (4) of the N.C. Administrative Code. The Coastal Resources Commission must approve all proposed ditches with maximum dimensions greater than six feet wide by four feet deep. If the CRC determines that the ditch will affect estuarine or navigable waters, a major development permit is required. The dimensions of all ditches are measured at the ground level.

No drainage ditch in and through marshes shall exceed six feet by four feet deep unless

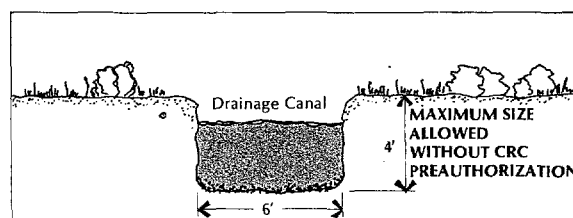


Figure 27. Maximum allowable size of drainage ditches.

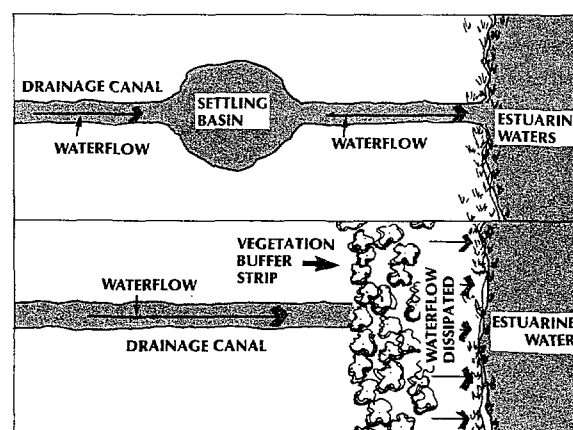


Figure 28. Retention devices used with drainage ditches.

the applicant can show that a larger ditch is needed for adequate drainage (see Figure 27).

Six feet by four feet is the standard size of drainage ditches in the coastal region. A ditch this size should be enough to drain the land and cause the least possible damage to surrounding wetlands.

No drainage ditch can cause significant damage to primary nursery areas, shellfish beds, submerged grass beds, or other important estuarine habitats.

The Division of Coastal Management's field representative can tell you where these areas are and how you can design a project to avoid them.

In designing and digging a drainage ditch it is necessary to be aware of the damage it can cause to the productive estuarine system. This damage comes not only from releasing fresh water, sediments, and nutrients into the wetlands and estuarine waters. Large releases of fresh water can alter the water's salinity,

which is the key to the whole system's ability to support abundant plant and animal life. Sediment coming from the ditch and surrounding lands can smother valuable habitats, cloud the water to keep light from reaching submerged vegetation, and choke fish and shellfish. Nutrients from lands that are drained by the ditch can cause algae blooms that rob the estuarine waters of light and oxygen.

Settling basins, water gates, and other runoff retention structures are examples of devices that can be used to reduce the amount of sediments and nutrients that wash into the drainage ditch and then into the wetlands and estuarine waters (see Figure 28). The Division of Soil and Water Conservation (see appendix for address) administers a cost-sharing program that can help pay for some of these devices.

The excavation of new ditches through high ground must occur landward of a temporary earthen plug or other device to reduce siltation of adjacent water bodies.

Spoil from the construction or maintenance of drainage ditches through a regularly flooded marsh must be placed landward of the marsh to prevent the introduction of sediment into the marsh or water. Where feasible, spoil from ditches through an irregularly flooded marsh must be placed on non-wetland areas (including former disposal sites).

Ditches must be designed to minimize diversions or reductions in the volume of flow to both surface waters and groundwater. No non-agricultural ditch may divert or restrict the flow of water to important wetlands or marine habitats.

Ditches must provide water of sufficient depth to allow the free passage of finfishes, juvenile shrimp, and other migratory animals.

Ditches may not create stagnant pools of water or significant changes in the velocity of flow.

Exemption

Small ditches used for agricultural or commercial forestry with dimensions less than six feet by four feet do not require a CAMA permit. This exemption applies only for agriculture and forestry and does not apply to permits required under the State Dredge and Fill Act.

Nourishment of Estuarine Beaches

North Carolina's broad sounds and tidal rivers are lined with numerous sand beaches that are used for recreation. At times the beach migrates or erodes, and loses its value as a recreational resource. The beach's usefulness for recreation can be temporarily restored by replenishing its supply of sand. However, such a project must be carefully carried out to prevent the deterioration of wetlands, shellfish beds, nursery areas, navigation channels, and water quality in the state's estuaries.

Estuarine beach nourishment projects must meet specific standards in addition to the general use standards for coastal wetlands, estuarine waters, and public trust areas. These standards (which are officially stated in Title 15, Subchapter 7H, Section .0208(b)(8) of the N.C. Administrative Code) are listed here.

Beach creation and/or maintenance may be allowed to enhance water-related recreational facilities for public, commercial, and private uses. Placing unconfined sand in the water and along the shoreline will not be allowed as a method for controlling shoreline erosion.

Beaches can be created and/or maintained where they historically have been found due to natural processes. They will not be allowed in areas with high erosion rates where frequent maintenance will be needed.

Beach creation will not be allowed in any primary nursery areas, on any submerged bottom with significant shellfish populations, or in any areas where siltation from the site would pose a threat to shellfish beds. Material shall not be placed on any coastal wetlands or submerged aquatic vegetation.

Wetlands, submerged vegetation beds, shellfish beds, and fish nursery areas are all vital components of the estuarine system that must be preserved. Covering them with sand to create a beach would destroy them and diminish the estuarine system's ability to support its bounty of fish, shellfish, and wildlife. Information on the location of wetlands, submerged vegetation beds, shellfish beds, and nursery areas can be obtained from DCM and the Division of Marine Fisheries. (See appendices for addresses and phone numbers.)

Beach creation must not create the potential for filling nearby navigation channels, canals, or boat basins.

Waves and water currents can easily wash loose sand from the beach into nearby channels and basins, thus creating a need for costly maintenance dredging that must be borne by another individual or the taxpaying public. In locating and maintaining beaches, water currents and sand migration patterns must be taken into consideration.

Beach construction shall not violate water quality standards. Material placed in the water and along the shoreline must be clean

sand that is free from pollutants and finer, highly erodible materials. Grain size must be equal to or larger than that found naturally at the site.

Pollutants and fine silt can contaminate coastal waters, cover submerged habitats, and threaten public health and the survival of aquatic plants and animals.

Materials from dredging projects may be used for beach nourishment only if all of the conditions described below are met.

1. Material is not placed directly on the beach by dredge or dragline during the excavation.
2. The material is first handled in a manner consistent with regulations governing spoil disposal (see specific standards for hydraulic dredging).
3. The material is allowed to dry for a suitable period.
4. Only material of acceptable grain size is removed from the disposal site for placement on the beach.

Permits will authorize beach nourishment only one time during the life of the permit. Permits may be renewed for maintenance work or renourishment. The adverse impacts of the original work must be evaluated before the permit can be renewed.

Ocean Hazard Areas of Environmental Concern

In carrying out its responsibilities under the Coastal Area Management Act, the Coastal Resources Commission has designated four categories of Areas of Environmental Concern (AECs): **the estuarine system, the ocean hazard system, public water supplies, and natural and cultural resource areas.** These AECs, and the standards for development in them, cover the coastal waters and about three percent of the land area of the 20 coastal counties. The following descriptions of the ocean hazard system AECs will help you identify whether or not your project is located in an area of environmental concern, as well as explain each area's importance and the reasons why it is necessary to manage development there.

The **ocean hazard system** covers the lands along the oceanfront and inlets that are vulnerable to storms, flooding, and erosion. The shape and location of these landforms, especially the beaches, dunes, and inlets, are always changing due to the forces of nature. The constant forces exerted by waves, wind, and water currents upon the sands of the ocean shoreline create a variety of hazards that threaten human activities along the shoreline. During storms, these forces intensify and can quickly change the shape of the shoreline, beaches, and dunes, and damage any structures located on them. At the same time, the beaches and dunes also protect structures located behind them by absorbing the force of wind and waves.

Because of this special vulnerability to natural hazards and the need to maintain beaches and dunes, development in ocean hazard areas must be carefully designed to avoid losses of life and property and damage to the natural environment. Absolute safety from destructive natural forces is impossible for development along the oceanfront. However, the loss of life and property from these forces can be greatly reduced by the proper location and design of oceanfront

structures and by preventing damage to natural protective features such as primary and frontal dunes.

The Coastal Resources Commission has designated three ocean hazard AECs in which CAMA permits are required: **the ocean erodible area, the high hazard flood area, and the inlet hazard area** (see Figure 29). CAMA permit standards for development in these areas are designed to:

- minimize loss of life and property due to storms and long-term erosion;
- prevent the encroachment of permanent structures on public beaches; and
- reduce the costs that improperly designed development imposes on the public (e.g., funding of erosion control works, beach nourishment projects, disaster relief aid, and the like).

The three ocean hazard areas overlap in many places, even though they are separate AECs with their own standards for development. The Division of Coastal Management's field representatives have aerial photographs delineating the exact boundaries of all the ocean hazard AECs.

Ocean Erodible Areas

The ocean erodible AEC covers the beaches and lands adjacent to the ocean which have a substantial possibility of long-term erosion and significant shoreline changes. The seaward boundary of this AEC is the mean low water line. The AEC extends landward for a distance equal to 60 times the long-term average annual rate of erosion for that particular stretch of ocean shoreline, plus an additional distance where significant erosion can be expected

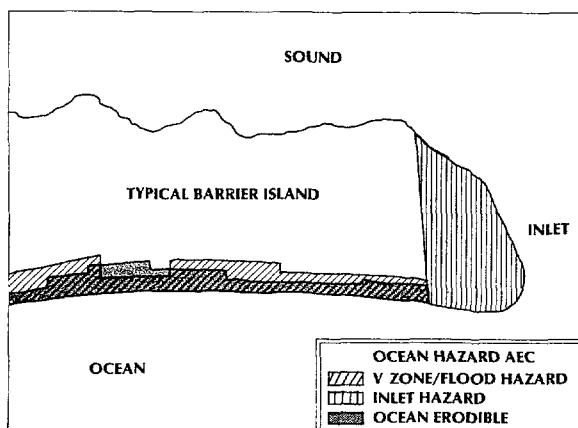


Figure 29. Ocean Hazard Areas of Environmental Concern.

during a major storm (see Figure 30). The width of this AEC varies for different sections of the oceanfront based on the Division of Coastal Management's analysis of historical erosion rates for each section of the Atlantic coast. The actual width of ocean erodible AECs along the coast varies from about 145 feet to over 700 feet. General maps of the erosion rates are available free of charge from the Division of Coastal Management. Detailed maps with precise information on the AEC boundary are available for inspection at all DCM and local permit officer offices.

High Hazard Flood Areas

The high hazard flood AEC covers lands subject to flooding, wave action, and high velocity water currents during a major storm. These are lands identified as "open coast high hazard areas" or "V zones" on the flood insurance rate maps prepared for oceanfront communities by the Federal Insurance Administration. The area covered by "V zones" is determined by an engineering analysis of expected flood levels

during a storm, expected wave and current patterns, and the existing topography or "lay of the land." If the community does not have flood insurance rate maps available, other data on flooding, as approved by the CRC, may be used to define the high hazard flood AECs. The high hazard flood overlaps with, but is usually wider than, the ocean erodible AEC.

Inlet Hazard Areas

Because they are adjacent to dynamic ocean inlets, inlet hazard AECs are especially vulnerable to erosion, flooding, and dramatic shoreline changes. Inlet hazard AECs are delineated on maps prepared by the Division of Coastal Management for each inlet along the coast based on an analysis of inlet migration rates and the elevation and width of adjacent lands. The maps are reviewed and approved by the Coastal Resources Commission. In each case, the inlet hazard AEC extends landward from the mean low water line for a distance sufficient to encompass those lands where the inlet can be expected to migrate. The delineation of each area is based on a statistical analysis of inlet migration, previous inlet locations, relatively narrow or low areas near the inlet, and the influence of such man-made features as jetties and channelization projects.

The width of inlet hazard AECs varies from one inlet to the next; the AEC is narrower near relatively stable inlets and wider near more dynamic inlets. In all areas, the inlet hazard AEC covers, at a minimum, the same distance inland as the ocean erodible AEC. The inlet hazard AECs range in width from about 250 feet for a fairly stable inlet to about 4,000 feet for the most dynamic inlets.

General Standards

Ocean Hazard AECs

Ocean erodible areas face long-term erosion and sudden storm-induced shoreline changes. **High hazard flood areas** face flooding and wave wash during a hurricane, northeaster, or other major storm. **Inlet hazard areas** face long-term erosion, sudden shoreline changes, flooding, and storm waves. Development in these three areas can pose a serious threat to lives and property in oceanfront communities.

The Coastal Resources Commission has adopted general use standards for development within ocean erodible areas, high hazard flood areas, and inlet hazard areas. These standards protect human lives and property by guiding the location and design of oceanfront structures. They protect sand dunes from destruction. They reduce the costs that improperly designed development imposes on the taxpaying public for building and maintaining erosion control structures and beach nourishment projects and for funding disaster relief aid. They protect the public beach from structures that would interfere with the public's access to and use of the beach.

Any development project which requires a CAMA permit in an ocean erodible AEC, high hazard flood AEC, or inlet hazard AEC must meet the following standards (which are officially stated in Title 15, Subchapter 7H, Section .0306 of the N.C. Administrative Code).

Development must be located and designed to minimize losses to life and property resulting from storms and long-term erosion, to prevent encroachment of permanent structures on public beach areas, and to reduce the public costs of inappropriately sited development.

Development in ocean hazard areas must incorporate all reasonable means and methods to avoid or minimize damage to the natural

environment and access to the public beaches. Some of these methods are listed below.

1. Limit the scale of the project and the damage it causes.
2. Restore the damaged environment.
3. Provide substitute resources to compensate for the damage.

No development shall involve the significant removal or relocation of sands or vegetation from primary or frontal dunes.

Primary and frontal dunes help protect structures built behind them from erosion, flooding, and storm waves. They also play a vital role in maintaining the structure of North Carolina's barrier islands and beaches. The dense root networks of the dune plants trap and anchor the sand. The alteration of frontal and primary dunes, and the vegetation on them, can change natural beach renourishment patterns, disrupt the stability of the entire barrier island system, and increase the risk of damage to human structures from erosion, flooding, and waves.

Development should be located as far back from the ocean as possible. At a minimum, all structures must be located behind the erosion setback line, the crest of the "primary dune," or the landward toe of the "frontal dune," whichever is the farthest landward.

1. The "erosion setback line" (see Figure 30(A)) extends landward from the first line of stable natural vegetation to a distance equal to 30 times the average annual erosion rate at the site. In areas where erosion is less than two feet per year, there is a minimum setback required of 60 feet landward from the vegetation line.

Erosion rates for different segments of the state's ocean shoreline are determined by the Division of Coastal Management using an analysis of aerial photographs dating back to the 1930's. These rates are adopted by the

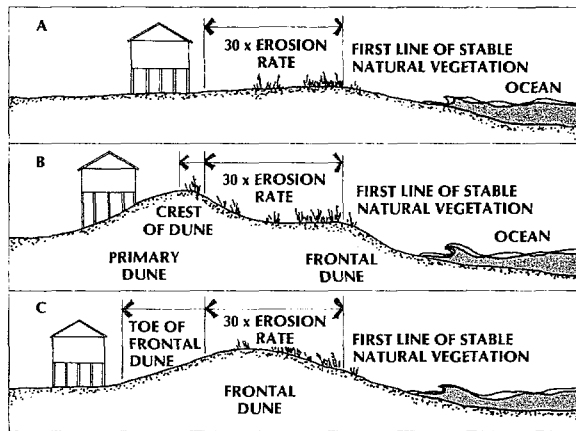


Figure 30. (A) (B) (C). The different minimum oceanfront setbacks required when building small structures.

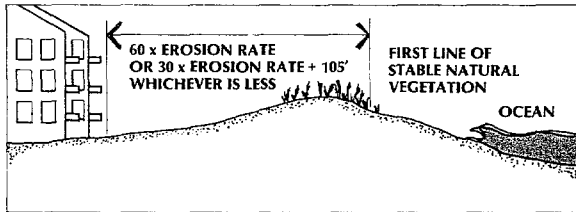


Figure 31. The minimum setback required when building large structures on the oceanfront.

Coastal Resources Commission to establish the "erosion setback line."

2. A "primary dune" is defined as the first mound of sand located landward of the ocean beach having an elevation equal to the mean flood level for the area plus six feet. The crest of the primary dune (see Figure 30(B)) is determined, on a case-by-case basis, by a DCM field representative or local permit officer.

3. "Frontal dunes" are the first mounds of sand located landward of the ocean beach with sufficient vegetation, height and configuration to offer protection from ocean storms. The landward toe of the frontal dune (see Figure 30 (C)) is determined, on a case-by-case basis, by a DCM field representative or local permit officer.

Man-made dunes created after June 1, 1979, will not be considered frontal or primary dunes.

Large-scale development, such as motels and condominiums, must meet an additional setback requirement, due to the unique physical, financial, and legal problems that relocating these structures poses. The following requirement applies to any structure of more than four dwelling units or 5,000 square feet (see Figure 31).

The erosion setback line for large structures extends landward from the first line of stable natural vegetation to a distance equal to 60 times the average annual erosion rate at the site. However, there is a "cap" on the length of the additional setback for large structures. If the large structure setback will be more than 105 feet longer than the basic setback, a distance of the basic setback plus 105 feet is used.

For example, in an area with an average annual erosion rate of 10 feet per year, the setback for small structures would be 300 feet. In this same area the setback for large structures – if there were no ceiling level – would be 600 feet. Because the basic setback cannot be increased by more than 105 feet, the setback would be 405 feet: the 300-foot basic setback plus 105 feet.

The permit applicant must sign an AEC Hazard Notice as part of the CAMA permit application to acknowledge that he or she is aware of the risks associated with development in the ocean hazard area and of the area's limited suitability for permanent structures. The hazard notice also states that the applicant is aware that no permanent erosion protection structures, such as wooden bulkheads, seawalls, and concrete breakwaters, may be built to protect oceanfront property. The preferred oceanfront erosion responses are beach nourishment and relocation of threatened buildings. Temporary erosion protection devices, such as low sandbag bulkheads and groins, may be permitted if certain conditions are met.

By granting permits, the Coastal Resources Commission does not guarantee the safety of

the development, nor does the CRC assume liability for future damage to the development.

All relocation of structures in ocean hazard areas requires permit approval.

Structures relocated entirely with private funds shall be relocated as far landward of the present location as possible. Structures relocated with public funds shall move to behind the applicable oceanfront setback and comply with all other AEC standards.

Development must meet all minimum lot size and setback requirements established by the local government.

Counties and towns often adopt regulations requiring a setback from roads, property lines, dunes, and the like. Information on local setback requirements can be obtained from the local building inspector.

The project must comply with the local land use plan.

Each of the coastal region's 20 counties and nearly all of its incorporated towns have adopted local land use plans under the Coastal Area Management Act. A local land use plan contains the goals citizens have for their community, a set of policies that the community will use to manage development to reach these goals, and a map classifying lands in the community according to the types of development that should occur on them. The Act requires projects receiving CAMA permits to comply with the local land use plan. If the local land use plan does not allow a certain type of development within the land classification where it is proposed, a CAMA permit cannot be issued for that project.

Mobile homes must not be placed within the high hazard flood area unless they are within mobile home parks that existed before June 1, 1979.

Mobile homes are generally less able to withstand the flooding, wave wash, and high winds associated with hurricanes, northeasters, and other storms that strike the North Carolina coast. Not only are they more likely

to sustain damage than other types of construction, they are also more likely to cause damage to other buildings by floating or blowing into them.

Development must not unduly interfere with the access to or use of public resources.

The public has a right to reach, use and enjoy these resources that belong to all the people of the state (such as the state's beaches and waters). Legal rights of access or use cannot be blocked by proposed development. No development is allowed seaward of the vegetation line, as the public has a right to use the sandy beach for normal beach recreation. Also, development cannot block legally established pathways to the beach itself.

Development must not cause major or irreversible damage to valuable, documented historic architectural or archaeological resources.

There are numerous sites along the coast which contain significant cultural resources that need to be protected. Historic architectural structures provide examples of important architectural styles and/or a legacy of people who have played an important role in the coastal region's history. Archaeological resources (such as sites containing the remains of Indian settlements, shipwrecks, and Civil or Revolutionary War artifacts) provide valuable information on the history of the coastal region and its people. These resources need protection, not only for historical and archaeological research, but also as lasting symbols of the coastal region's heritage. Information on the location of valuable architectural or archaeological sites can be obtained from the Division of Archives and History in the Department of Cultural Resources. (See appendices for address and phone number).

In order to avoid excessive public expenditures for repairs, the construction or placement of publicly funded facilities (such as sewers, waterlines, roads, bridges, and

erosion control works) will be permitted only if the conditions listed below are met.

1. It exhibits an overriding public benefit or is of national or state interest.
2. It will not promote additional development in ocean hazard AECs.
3. It will not damage natural buffers to erosion, wave wash, and flooding or otherwise increase existing hazards.
4. It is designed to avoid or withstand damage from flooding and erosion.

Exceptions

The following types of development may be permitted between the oceanfront setback line and the vegetation line if they involve no alteration or removal of primary dunes, and dune vegetation; if they have overwalks to protect existing dunes; and if they meet all other standards for ocean hazard AECs:

- campgrounds that do not involve substantial permanent structures;
- parking areas with clay, packed sand, or similar surfaces;
- outdoor tennis courts;
- beach access structures;
- elevated decks not exceeding 500 square feet of floor area;
- uninhabitable storage sheds and unenclosed, uninhabitable gazebos with a floor area not exceeding 200 square feet;
- temporary amusement stands; and

- swimming pools.

Where application of the oceanfront setback requirement would preclude the development of permanent structures on lots which existed as of June 1, 1979, single family homes may be permitted seaward of the setback line in ocean erodible areas if they meet all of the following conditions:

- the structure is set back as far as possible from the ocean, with minimal encroachment into the setback area;
- it is at least 60 feet landward of the vegetation line;
- it is entirely behind the landward toe of the frontal dune;
- all pilings used to support the structure penetrate down to at least four feet below mean sea level (see Figure 34);
- the lowest habitable floor of the structure covers no more than 1,000 square feet or 10 percent of the lot area, whichever is greater; and
- the project meets all other state and local requirements.

If the development is to be serviced by an on-site waste disposal system, a copy of a valid permit for this system (from the local board of health or N.C. Department of Human Resources) must be submitted with the CAMA permit application.

These exceptions do not apply to inlet hazard areas.

Specific Standards

Oceanfront Construction

Erosion is the rule rather than the exception on North Carolina's barrier islands: over a period of months or years, the beach and dunes retreat until oceanfront buildings are threatened. Severe erosion can also occur overnight as a result of storm tides, waves, and wind.

Building a home or business along North Carolina's oceanfront allows people to fully enjoy the state's beaches, surf, and sun. These are the very resources which draw people to the coast. However, the shoreline is a dynamic environment that presents a variety of hazards to oceanfront development.

Northeasters, hurricanes, and other major storms frequently strike the coast. Their heavy waves, flooding, and high winds can drastically change the shape of the beach, threaten human lives, and cause millions of dollars of property damage in oceanfront communities. Designs for oceanfront development can take these factors into account to minimize damage.

To avoid unreasonable danger to life and property, new construction and substantial improvements to existing structures (an increase of 50 percent or more in value or square footage) must meet specific standards in addition to the setbacks and general use standards for ocean hazard AECs discussed above. These standards (which are officially stated in Title 15, Subchapter 7H, Section .0308(d) of the N.C. Administrative Code) are as follows.

Any building constructed within an ocean hazard area must comply with Appendix D, "Windstorm Resistive Construction" of the N.C. Residential Building Code. When any provisions of that appendix are inconsistent with the AEC standards, the more restrictive provisions shall control.

The local building inspector can explain what is required by the State Building Code. Ap-

pendix D presents "design wind speeds" and construction methods that help guard a building against wind damage during a storm.

All development must be designed and located to minimize damage due to wave action and ground level fluctuations in a 100-year storm. All foundations must be designed to be stable in a 100-year storm. Cantilevered decks and walkways shall meet this standard or be designed to break away without damaging the main building.

The bottom of the foundation (excluding pilings and footings) must be elevated to or above the 100-year flood level (see Figure 32).

All structures shall be on pilings that are no less than eight inches in diameter if round, or eight inches to a side if square (see Figure 33).

The tips of all pilings must penetrate to at least eight feet below the lowest ground elevation under the structure. For structures on or

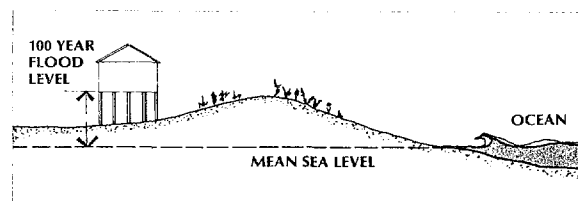


Figure 32. Houses must be elevated to or above the 100-year flood level. The DCM field representative or local permit officer can provide these specifications.

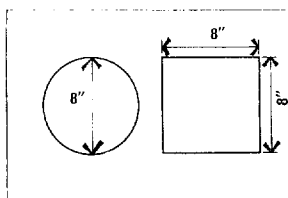


Figure 33. Minimum dimensions for pilings allowable on oceanfront construction.

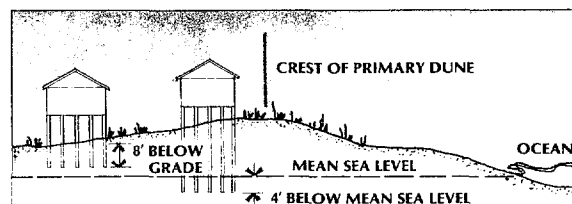


Figure 34. Piling depth necessary for building on and behind a primary dune.

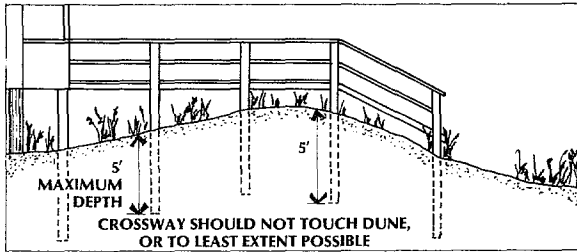


Figure 35. Maximum piling depth for accessways.

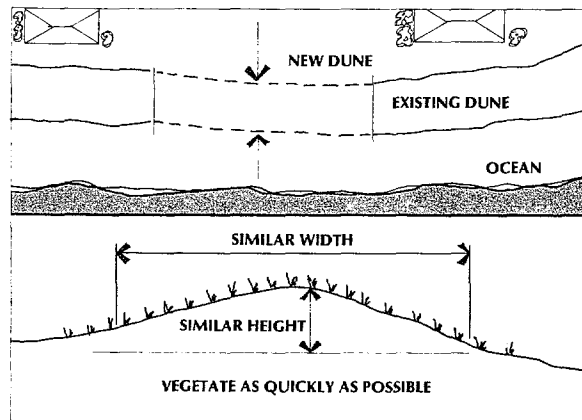


Figure 36. Requirements for creating new dunes.

in front of the primary dune, the pilings must extend to four feet below mean sea level (see Figure 34).

Driving pilings deeper into the ground increases their ability to withstand serious storm-induced erosion of the ground beneath the building. Once erosion totally exposes the pilings, the building will collapse from the lack of support.

All pilings must be treated to resist decay, insects, and corrosion.

All walls below the 100-year flood level must be designed and built to meet all of the conditions listed below.

1. Allow storm waters to rise and flow freely under the building.
2. Collapse under stress without jeopardizing the building's structural support.
3. Not become waterborne debris themselves.
4. Not cause waterborne debris to accumulate.

All exposed structural connections must be adequately rustproofed or enclosed.

All utility systems (such as heating, air conditioning, and electrical boxes) must be located and built to avoid or reduce storm damage.

No impermeable surfaces (such as asphalt or concrete) shall be placed over any functional part of a complete septic tank system.

Structural Accessways

People who own oceanfront property often build wooden walks from their house or business out to the beach. These "structural accessways" make it easier to get to and from the beach. They also provide a well-defined pathway that keeps people from cutting trails through dunes, and weakening the dunes' ability to buffer erosion and protect oceanfront buildings.

To ensure that the dune system is not damaged when building a structural accessway, specific standards – in addition to the general use standards for ocean hazard AECs – must be met. These standards (which are officially stated in Title 15, Subchapter 7H, Section .0308(c) of the N.C. Administrative Code) are described here.

A structural accessway will be permitted across a dune as long as it entails negligible alteration of the dune. No accessway shall diminish the dune's capacity as a barrier to flooding and erosion.

Primary and frontal dunes help protect structures behind them from erosion, flooding, and storm waves. Dunes also play a vital role in maintaining North Carolina's barrier islands and beaches. The dense root networks of the dune plants trap and anchor the sand. The alteration of frontal and primary dunes – and the vegetation on them – can disrupt natural beach nourishment patterns, destabilize the entire barrier island system, and increase the

risk of damage to human structures from erosion, flooding, and waves.

The accessway must be exclusively for pedestrian use.

The accessway must be less than six feet wide.

The accessway must be raised on pilings embedded to a depth of five feet or less so that only the pilings touch the frontal dune.

Where this is not possible, the accessway may touch the dune only to the extent necessary (see Figure 35).

Elevating the accessway allows the dune to adjust naturally to wind and wave forces and thus maintain the stability of the protective dune system.

An accessway wider than six feet and used for anything other than pedestrians will be permitted only if it is elevated above the dune and serves a public need which cannot be met otherwise. This rule does not apply to public fishing piers as long as they meet all other standards.

Any vegetated areas that are disturbed in the construction and use of the accessway must be revegetated as quickly as possible.

The stems and roots of beach grasses and other plants hold sand in place and thus help stabilize the dune system.

Exemption

The Coastal Resources Commission does not require a **minor development permit** for non-commercial, pedestrian accessways that do not exceed six feet in width. The accessway must be built with no unnecessary alterations to the frontal dune. (Driving pilings into the dune is not considered "alteration" in this case.) In no case may the dune be altered to diminish its capacity as a barrier against flooding and erosion. The accessway must conform to all applicable state and local building code standards. Before beginning any work under this exemption, you must notify the local permit officer or the DCM field

representative about the dimensions of the proposed accessway, its location, and the landowner's name, address, and telephone number. This exemption is officially stated in Title 15, Subchapter 7K, Section .0308 of the N.C. Administrative Code.

Oceanfront Erosion Protection Measures

Erosion is a fact of life in North Carolina's oceanfront communities. It is a natural geologic process; there is nothing that people can do to stop it. Although there are several erosion responses which may be helpful for short periods, eventually threatened structures will need to be moved to a safer location. In building a structure, it should be placed as far back from the beach as is possible. For existing buildings threatened by erosion, relocation to safer sites or replenishing the beach's supply of sand are the preferred responses.

To protect private property from erosion while maintaining the public beach, oceanfront erosion protection measures must meet specific standards in addition to the general use standards for ocean hazard AECs. These standards (which are officially stated in Title 15, Subchapter 7H, Section .0308(a) of the N.C. Administrative Code) are explained below.

Permanent shoreline stabilization by such measures as bulkheads and seawalls is prohibited.

Shoreline stabilization causes the loss of the public beach. It also increases erosion at adjacent properties by interrupting natural sand migration patterns.

Comprehensive shoreline management is preferred over small-scale projects.

Erosion protection measures are more successful when they are coordinated and carried out over a larger stretch of shoreline, rather than at scattered, individual sites.

Building relocation and beach renourishment projects are preferred over other erosion protection measures.

All erosion control projects must demonstrate sound engineering practices.

No permit for an erosion protection project will be granted until notice has been given to adjacent property owners and they have signed a notice form, or until a reasonable effort has been made to notify them by registered or certified mail.

When an existing oceanfront structure is imminently threatened by erosion, a property owner may obtain a permit to temporarily protect the structure with low sandbag bulkheads or beach nourishment.

An "existing, threatened structure" is one where erosion places the structure's foundation in imminent danger of flooding or collapsing. A foundation is normally considered endangered when it is less than 20 feet from the erosion scarp or the seaward toe of the dune. In general, structural accessways, pools, parking lots, tennis courts, and similar structures do not qualify as existing, threatened structures.

No shoreline erosion protection project may be built in an area that provides a habitat for important wildlife species unless adequate steps to protect, restore, or replace that habitat are taken.

Project construction must be timed to cause the least possible damage to biological processes.

Certain times of year and certain times of day are important to the breeding, spawning, nesting, and feeding cycles of shorebirds, sea turtles, and other important species that inhabit the beaches and dunes. Erosion protection projects must accommodate these cycles in order to protect North Carolina's wildlife resources.

Beach bulldozing (moving sand from any point seaward of the first line of stable vegetation to create a protective dike or for any other purpose) is not proven to be effective in protecting property, but may be permitted if all the conditions described below are met.

1. Beach material is removed no deeper than one foot below the existing surface elevation.
2. The movement of material maintains a slope that does not endanger the public or the public's use of the beach.
3. The project does not go beyond the bounds of the applicant's property without the permission of neighboring property owners.
4. The project does not increase erosion on neighboring properties.
5. No material is removed from below the mean low water line.
6. The project does not damage important natural or cultural resources.
7. The movement of material protects the threatened structure's foundation or threatened on-site waste disposal systems.

Exemption

The Coastal Resources Commission does not require a **minor development permit** for beach bulldozing in emergency situations, as long as all the conditions stated above are met. Individuals proposing other activities as emergency maintenance and repairs must first consult with the local permit officer to determine if the action qualifies for exemption. "Emergency maintenance and repairs" include any activity that is a response to a sudden, unexpected event (such as a hurricane or other major storm) which significantly endangers life or property. Property is considered endangered when the structure's foundation is less than 20 feet from the toe of the erosion scarp. The exemption is limited to actions that will prevent further danger or restore the property to its condition prior to the emergency; it does not cover additions or expansions to the property. This exemption is officially stated in Title 15, Subchapter 7K, Sections

.1010(5) and .0305 of the N.C. Administrative Code.

Dune Establishment and Stabilization

Sand dunes provide a natural buffer against the erosive forces of the wind, water, and waves. It is sometimes necessary to stabilize or strengthen existing sand dunes, and even build new ones, as a defense against storm damage and to protect oceanfront buildings and roads. As with other types of development in ocean hazard AECs, dune establishment and stabilization projects must be thoughtfully planned and carried out to avoid damaging the beach and dune system.

Dune establishment and stabilization projects must meet the specific standards in addition to the general use standards for all development in ocean hazard AECs. These standards (which are officially stated in Title 15, Subchapter 7H, Section .0308(b) of the N.C. Administrative Code) are listed below.

No disturbance of dunes will be permitted when alternative construction methods or sites can be used.

Existing primary and frontal dunes must not be broadened or extended toward the ocean, except for beach renourishment or emergency maintenance.

No new dunes may be created in inlet hazard areas.

New dunes must be aligned with and of the same general configuration as existing neighboring dune ridges (see Figure 36).

Sand needed to strengthen existing dunes, or to establish new dunes, must be brought in from outside the ocean hazard area and must be similar to the sand already on the property.

Taking sand from one part of the ocean hazard area to strengthen the dunes or beach

at another part of the AEC is the same as "robbing Peter to pay Paul" – it decreases the AEC's supply of sand that helps buffer the forces of storms and erosion. If the sand brought onto the project site does not have a grain size and shape similar to the sand that is already there, then the new sand will not interlock with the existing sand to build stable dunes.

If the work will help protect a proposed structure, sand from any dune on the site other than the frontal and primary dunes may be moved to strengthen existing frontal and primary dunes.

Sand must be added to dunes in a manner causing the least possible damage to the existing vegetation. Any filled areas must be immediately replanted or temporarily stabilized until replanting is completed.

The stems and roots of beach grasses and other plants hold sand in place and thus stabilize the dune system.

Inlet Hazard Areas

Of the three ocean hazard AECs, inlet hazard areas pose the greatest dangers to life and property. North Carolina's numerous ocean inlets are constantly migrating – sometimes widening and sometimes filling in. They are famous for their unpredictability. New inlets are created by major storms as inland floodwaters "blow out" a low or narrow section of a barrier island so they can drain into the ocean. As the "pressure valve" for storm floodwaters entering and leaving the state's sounds and tidal rivers, inlets and the lands around them are subject to severe erosion, flooding, and wave wash during and after storms. These hazards call for even stricter guidelines for development in inlet hazard areas to protect human lives and property.

Development in inlet hazard areas must meet specific standards in addition to the general use standards for all development in ocean hazard AECs. These standards (which are officially stated in Title 15, Subchapter 7H, Section .0310

of the N.C. Administrative Code) are described below.

Only residential buildings of four units or less, and non-residential structures of less than 5,000 square feet total floor area, are allowed within the inlet hazard area.

All development must be set back from the first line of stable natural vegetation a distance equal to the setback required in the neighboring ocean erodible area.

On lots created or subdivided after July 23, 1981, permanent structures will be allowed at

a density of no more than one unit per 15,000 square feet of developable land area.

Mud flats, salt marshes, and beach areas seaward of the vegetation line are not included in computing a lot's land area or density for the purposes of this rule.

Traditional accessways to the beach that have been subject to longstanding, open, and continuous public use must not be eliminated or otherwise restricted.

Shoreline stabilization structures are allowed only as part of a publicly supported project.

Public Water Supply Areas of Environmental Concern

In carrying out its responsibilities under the Coastal Area Management Act, the Coastal Resources Commission has designated four categories of Areas of Environmental Concern (AECs): **the estuarine system, the ocean hazard system, public water supplies, and natural and cultural resource areas.** The **public water supply AECs** protect **surface water supply watersheds** and **public water supply well fields.** These water supplies, if degraded, could threaten public health or require local communities to spend substantial amounts of money to develop alternative water sources. Uncontrolled development within these areas could change runoff patterns or groundwater withdrawal rates, and reduce both the quantity and quality of the raw water supply. Uncontrolled development could also reduce water quality by introducing sediment from construction sites and a variety of pollutants (bacteria, heavy metals, gasoline, oil, etc.) from homes, businesses, industries, parking lots, and roads.

Small surface water supply watershed AECs are drainage basins in the coastal area which contain a water body used as a public water supply and classified as A-II by the Environmental Management Commission. The watershed, or drainage area, of the A-II water body is designated as an AEC by the Coastal Resources Commission based on information from the Department of Human Resources. To date, two such watersheds have been designated as AECs: the Fresh Pond at the Nags Head/Kill Devil Hills border and Toomers Creek near Wilmington. The towns of Nags Head and Kill Devil Hills both have water treatment plants that draw raw water from the Fresh Pond; this freshwater lake is fed by groundwater and rainfall from surrounding lands. Toomers Creek is a tributary of the Cape Fear River and is used by the City of Wilmington as an auxiliary drinking water supply.

Public water supply well field AECs are areas of rapid draining sands that extend down from the land surface into a shallow groundwater table which supplies the public with potable water. These are designated as AECs by the Coastal Resources Commission based on information from the Department of Human Resources and the responsible local government. To date, two well fields have been designated as AECs: one in Elizabeth City and one at Cape Hatteras. The city of Elizabeth City is supplied with raw water from a shallow well field in the southeastern section of the Dismal Swamp. The Cape Hatteras Water Association draws its raw water from a well field located south of N.C. 12 on Hatteras Island between Frisco and Buxton.

Since the lands in these surface watersheds and well fields are almost entirely in public ownership, there is rarely any development proposed within them. However, anyone who thinks their proposed development may be in or near a public water supply AEC should contact their local permit officer or one of the Division of Coastal Management's field representatives. They can tell a permit applicant what standards the CRC has adopted for development in each public water supply AEC.

Specific Standards

Small Surface Water Supply Watersheds

Small surface water supply watershed AECs are drainage basins containing a water body classified as A-II by the state's Environmental Management Commission. This means that the best use of the water is for public drinking water. In order to protect the high quality of these waters, the CRC has adopted the following standards (which are officially stated in Title 15,

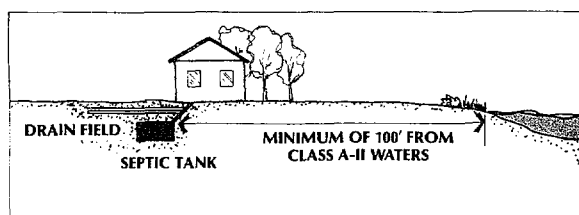


Figure 37. Location of sewage disposal systems.

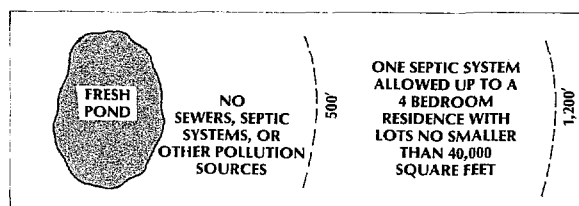


Figure 38. Location of sewage disposal systems, or other sources of pollution, in the Nags Head/Kill Devil Hills Fresh Pond watershed.

Subchapter 7H, Sections .0405 and .1001 of the N.C. Administrative Code) for development within the small watershed AECs.

Ground absorption sewage disposal systems must be located at least 100 feet from A-II waters (see Figure 37).

Septic tanks and drainfields can pollute public drinking water supplies unless they are located well away from the edge of the water. Waste effluent from the septic system can migrate through the soil and the water table, pollute a pond or stream, and create a serious threat to public health.

Land clearing, grading, surfacing, and other land-disturbing activities must meet the requirements of the N.C. Sedimentation Pollution Control Act of 1973 (G.S. 113A-57).

Activities that disturb the soil near a public water supply can cause sediment and other pollutants to be washed into the water during a rainstorm or by high winds. This contamination not only presents a risk to public health, but also fills in the creek or reservoir and increases the cost of treating the water to make it fit for drinking.

Development requiring a National Pollution Discharge Elimination System (NPDES) per-

mit must obtain the NPDES permit before a CAMA permit will be granted.

The NPDES permit is required for certain activities by the Clean Water Act to protect the quality of the nation's waters. Information on NPDES requirements can be obtained from the Division of Environmental Management in the Department of Natural Resources and Community Development. (See appendices for address and phone number.)

In the Nags Head/Kill Devil Hills Fresh Pond watershed no sewers, septic tank fields, or other sources of pollution may be built within 500 feet of the pond's edge. Between 500 feet and 1,200 feet from the pond, septic systems are limited to one system serving a single-family residence having no more than four bedrooms (or an equivalent volume of sewage) on a lot no smaller than 40,000 square feet (see Figure 38).

Public Water Supply Well Fields

Public water supply well field AECs are areas with rapid draining sands extending from the surface into a shallow groundwater table that supplies the public with potable water. Rain-water drains easily through these sands and maintains the amount of fresh water in the water table. Any contamination of the sands or the water table poses a threat to public health since the well fields are a source of drinking water. In order to protect the high quality of the water table at each designated well field, the CRC has adopted the following standards (which are officially stated in Title 15, Subchapter 7H, Sections .0406 and .1002 of the N.C. Administrative Code) for development within the well field AECs.

The project must not significantly limit the quality of the water supply or the amount of water recharging the well field.

The project must not use a septic tank system or other ground absorption sewage disposal system within the designated AEC boundaries.

The project must not inject pollutants below the ground surface within the designated AEC boundaries.

The project must not discharge toxic and/or soluble materials that could contaminate the water supply.

The project must not cause saltwater intrusion into the public water supply.

Natural and Cultural Resource Areas of Environmental Concern

In carrying out its mandate under the Coastal Area Management Act, the Coastal Resources Commission has designated four categories of Areas of Environmental Concern (AECs): **the estuarine system, the ocean hazard system, public water supplies, and natural and cultural resource areas.**

Natural and cultural resource AECs contain environmental or cultural resources within the 20-county coastal region that are important to the entire state because of their role in maintaining the coastal ecosystem, value for scientific research and education, historical significance, and/or aesthetic value. Uncontrolled development in these areas could lead to significant or irreversible damage to important natural systems and cultural resources, and their historical, scientific, educational, and aesthetic values.

The natural and cultural resource AECs include **complex natural areas, areas that sustain remnant species, unique geologic formations, significant archaeological sites, and significant historic architectural structures.**

Coastal complex natural areas are lands that support native plant and animal communities and provide habitats which have remained essentially unchanged by human activity. These areas, often representing pre-settlement conditions, can provide a historical perspective to changing natural habitats in the coastal region and constitute an important and irreplaceable scientific and educational resource. Such areas may have been altered in the past and/or be subject to limited future modification if the modification benefits the habitat present or enhances the area's biological, scientific, or educational values. Coastal complex natural areas function as key components of natural biological systems, as important scientific and educational sites, or as valuable scenic or cultural resources.

Coastal areas that sustain remnant species provide habitat for native plant or animal species that are determined by the Wildlife Resources Commission or the federal government to be rare, threatened, or endangered. Such areas are necessary for the survival of these species within the coastal region and for maintaining the natural diversity that stabilizes the coastal ecosystem. They also constitute a valuable educational and scientific resource that cannot be duplicated or replaced.

Unique coastal geologic formations are areas containing especially notable examples of geologic formations or processes found in the coastal area. Such formations are important educational, scientific, and scenic resources. Jockey's Ridge, in Dare County, has been designated because of its exceptional geologic features.

Significant coastal archaeological resources and significant coastal historic architectural resources contain objects, features, buildings, and/or sites that:

- yield information important to the state's or the coastal region's history or prehistory;
- are associated with events that have contributed to the broad patterns of history;
- are associated with the lives of historically important persons; or
- embody the distinctive characteristics of a type, period, or method of construction.

These provide unmatched and irreplaceable scientific, educational, and aesthetic values that commemorate the coastal region's heritage. Per muda Island, located in Onslow County, has

been protected for its outstanding archaeological resources.

The standards for development in any individual area designated as a natural or cultural resource AEC are tailored to fit the management and resource protection needs of that particular area. The management plans for Permuda Island and Jockey's Ridge are available from the Division of Coastal Management.

Nomination and Designation Procedures

The CAMA regulations establish a detailed nomination procedure under which potential sites are brought to the CRC for consideration as AECs. These nomination procedures are officially stated in Title 15, Subchapter 7H, Section .0503 of the N.C. Administrative Code. The nomination and designation procedure requires a detailed review of the proposal by the Division of Coastal Management, consultation with the affected landowner and local governments, and a public hearing.

The nomination and designation of natural and cultural resource AECs is a process unique to this category of AECs. An area may be nominated for the CRC's consideration at any time by any person or group. The nomination is made on a standard form provided by the Division of Coastal Management. It must include information regarding the location, size, ownership, importance, and uniqueness of the proposed site.

Within 60 days after receiving the nomination, the Division of Coastal Management will conduct a preliminary evaluation of the site to see if it merits special protection as an AEC. The division will inform the landowner, local government, and members of the Coastal Resources Commission and Coastal Resources Advisory Council of the proposed nomination. It will also examine various ways of protecting the site to

see if designation as an AEC would be the most appropriate.

A report on the preliminary evaluation is then presented to the CRC at its next meeting so that the commission may determine whether to endorse the evaluation and proceed with a more detailed analysis of the site. All parties involved in the nomination and preliminary evaluation will be notified in writing of the CRC's decision to proceed or not to proceed with a detailed analysis. For sites that do not receive endorsement by the CRC, the Division of Coastal Management may discuss other forms of protection with the landowner.

Within 90 days after endorsement by the CRC, the Division of Coastal Management will conduct a detailed review of the proposed site. This will include developing a management plan or specific use standards for the site (with advice from interest groups, local government officials, and persons with specific expertise) to outline strategies to safeguard the site's biological, scientific, educational, and aesthetic values.

If, after receiving a report of the detailed review, the CRC decides to consider formally designating the site as a natural and cultural resource AEC, a public hearing will be scheduled within 30 days after the CRC's decision. At this hearing, the CRC will present the scientific documentation and general statements supporting the designation and hear public comments on the AEC proposal. The owner of the site has 10 days after the public hearing to submit statements concerning the designation.

After considering all comments, the CRC will make its final decision on whether or not to declare the site as an area of environmental concern. If the site is designated as an AEC, the CRC will adopt a management plan or use standards applying to the site.

Appendix One

Tax Credit for Land Donations

State law now allows individuals and corporations that donate land for conservation purposes to receive a state income tax credit. Prior to 1983, a tax deduction could be taken for these gifts, but after 1983 a tax credit as well as a deduction can be taken.

To receive the credit, the taxpayer must donate an interest in land (full title or an easement usually) to the state, a local government, or a nonprofit group engaged in land conservation (such as The Nature Conservancy or a local land trust). The land must be useful for a land conservation purpose, such as beach access or wildlife conservation. The amount of the credit is set at 25 percent of the fair market value of the donated land, up to a maximum of \$5,000. If all of the credit is not needed in one year, it can be carried over up to five years.

For example, if someone owned an oceanfront lot that was too small to build on but which could be useful for beach access, it could be donated to the state and the new tax credit claimed. If the lot was appraised to have a fair market value of \$20,000, the tax credit would be \$5,000 (25 percent of \$20,000). So the amount of state income tax owed would be reduced by \$5,000. Also, that portion of the gift not used as a credit, \$15,000 (\$20,000 less the \$5,000 credit), can still be taken as a tax deduction. If the taxpayer is in the seven percent tax bracket, this deduction would be worth \$1,050. So the total tax benefit to the taxpayer resulting from the gift of the lot to the state would be \$6,050.

For more information about the tax credit for land donations, contact a Division of Coastal Management representative at one of the offices listed on page 72.

Appendix Two

Coastal Management Offices

Raleigh Office

Division of Coastal Management
N.C. Department of Natural Resources and
Community Development
P.O. Box 27687
Raleigh, NC 27611-7687
919/733-2293

Elizabeth City Office

Division of Coastal Management
N.C. Department of Natural Resources and
Community Development
Route 6, Box 203
Elizabeth City, NC 27909
919/264-3901

Washington Office

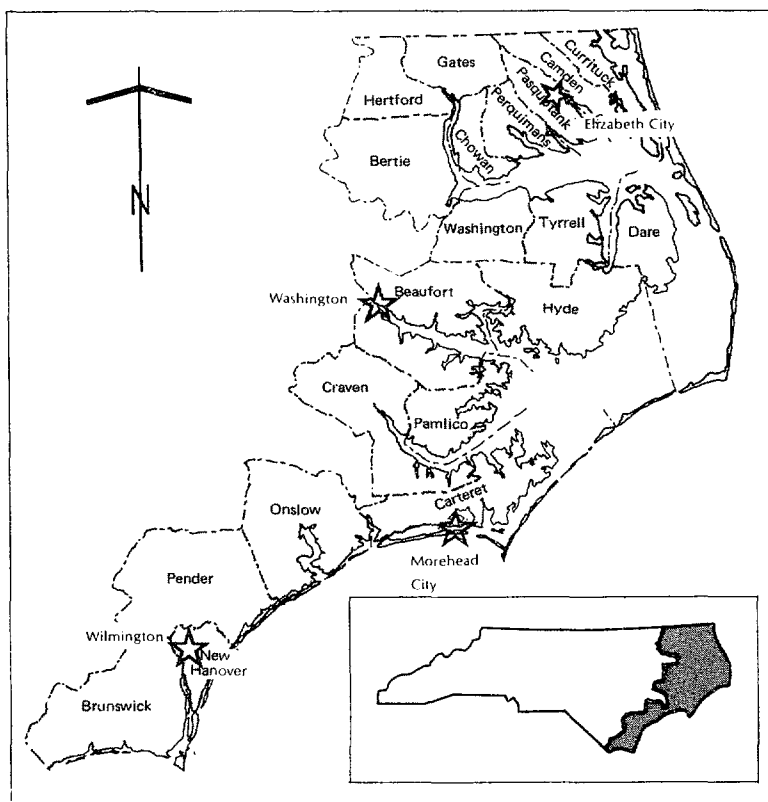
Division of Coastal Management
N.C. Department of Natural Resources and
Community Development
1424 Carolina Avenue
P.O. Box 1507
Washington, NC 27889
919/946-6481

Morehead City Office

Division of Coastal Management
N.C. Department of Natural Resources and
Community Development
3411 Arendell Street
P.O. Box 769
Morehead City, NC 28557
800/682-2632
919/726-7021

Wilmington Office

Division of Coastal Management
N.C. Department of Natural Resources and
Community Development
7225 Wrightsville Avenue
Wilmington, NC 28403
919/256-4161



Appendix Three

Local Permit Officers

Address all correspondence to CAMA Officer.

Beaufort County

County of Beaufort
P.O. Box 1027
Washington, NC 27889
919/946-7182

Town of Bath
Route 1, Box 458
Bath, NC 27808
919/923-5941 (after 5 p.m.)

Town of Belhaven
P.O. Box 220
Belhaven, NC 27810
919/943-3105

City of Washington
P.O. Box 1988
Washington, NC 27889
919/946-1033

Bertie County

County of Bertie
P.O. Box 530
Windsor, NC 27893
919/794-4031

Brunswick County

County of Brunswick
P.O. Box 249
Bolivia, NC 28422
919/253-4361

Village of Bald Head Island
Bald Head Island, NC 28461
919/457-4758

Town of Caswell Beach
Seaside Realty
5200 East Oak Island Drive
Long Beach, NC 28461
919/278-5805

Town of Holden Beach
110 Rothschild Street
Holden Beach, NC 28462
919/842-6488

Town of Long Beach
P.O. Box 217
Long Beach, NC 28461
919/278-5011

Town of Ocean Isle Beach
Ocean Isle Beach Town Hall
P.O. Box 0-8
Ocean Isle Beach, NC 28459
919/579-2166

Town of Southport
201 E. Moore Street
Southport, NC 28461
919/457-6911

Town of Sunset Beach
Box 220, Shoreline Drive West
Sunset Beach, NC 28459
919/579-6297

Town of Yaupon Beach
518 Yaupon Drive
Yaupon Beach, NC 28461
919/278-5024

Camden County

County of Camden
P.O. Box 125
Camden, NC 27921
919/338-6363

Carteret County

County of Carteret
Planning Department
Courthouse Square
Beaufort, NC 28516-1898
919/728-8497

Town of Atlantic Beach
P.O. Box 10
Atlantic Beach, NC 28512
919/726-8380

Town of Emerald Isle
Emerald Isle Town Hall
Route 1
Morehead City, NC 28557
919/354-3424

City of Morehead City
P.O. Drawer M
Morehead City, NC 28557
919/726-5243

Town of Pine Knoll Shores
P.O. Box 757
Atlantic Beach, NC 28512
919/247-4353

Chowan County

County of Chowan
Chowan County Office Building
P.O. Box 1030
Edenton, NC 27932
919/482-8486

Town of Edenton
P.O. Box 300
Edenton, NC 27932
919/482-2155

Craven County

County of Craven
P.O. Drawer R
New Bern, NC 28560
919/636-6607

City of New Bern
P.O. Box 1129
New Bern, NC 28560
919/633-5161 Ext. 240

Currituck County

County of Currituck
P.O. Box 70
Currituck, NC 27929
919/232-3378 or 232-3055

Dare County

County of Dare
Dare County Administration Building
P.O. Box 1000
Manteo, NC 27954
919/473-2143

Town of Kill Devil Hills
P.O. Box 719
Kill Devil Hills, NC 27948
919/441-2531

Town of Kitty Hawk
P.O. Box 549
Kitty Hawk, NC 27949
919/261-3552

Town of Nags Head
P.O. Box 99
Nags Head, NC 27959
919/441-5508

Town of Southern Shores
P.O. Box 272
Kitty Hawk, NC 27949
919/261-2394

Gates County

(Minor permits are written by the Secretary of the Department of Natural Resources and Community Development. Contact the DCM field representative in the Elizabeth City Office.)

Hertford County

County of Hertford
Building Inspector's Office
P.O. Box 424
Winton, NC 27986
919/358-7813

Hyde County

County of Hyde
P.O. Box 66
Swan Quarter, NC 27885
919/926-8861

New Hanover County

County of New Hanover
414 Chestnut Street
Room 101 Engineering Department
Wilmington, NC 28401
919/341-7139

Town of Carolina Beach
207 Canal Drive
Carolina Beach, NC 28428
919/458-9451

Town of Kure Beach
P.O. Box 3
Kure Beach, NC 28449
919/458-8216

Town of Wrightsville Beach
P.O. Box 626
Wrightsville Beach, NC 28480
919/256-4148

Onslow County

County of Onslow
25 Tallman Street
Jacksonville, NC 28540
919/455-3661

City of Jacksonville
P.O. Box 128
Jacksonville, NC 28540
919/455-2600

Town of Swansboro
P.O. Box 776
Swansboro, NC 28584
919/326-4428

Pamlico County

County of Pamlico
P.O. Box 186
Bayboro, NC 28515
919/745-3861

Pasquotank County

County of Pasquotank
P.O. Box 39
Elizabeth City, NC 27909
919/338-1144

City of Elizabeth City
P.O. Box 347
Elizabeth City, NC 27909
919/338-3981

Pender County

County of Pender
P.O. Box 832
Burgaw, NC 28425
919/259-1202

Town of Surf City
P.O. Box 475
Surf City, NC 28445
919/328-4131

Town of Topsail Beach
P.O. Box 89
Topsail Beach, NC 28445
919/328-5841

Perquimans County

County of Perquimans
P.O. Box 7
Hertford, NC 27944
919/426-7010

Tyrrell County

(Minor permits are written by the Washington
County Local Permit Officer.)

P.O. Box 449
Columbia, NC 27925
919/796-1371

Washington County

County of Washington
Washington County Courthouse
P.O. Box 1007
Plymouth, NC 27962
919/793-4114

Appendix Four

Related Government Agencies

Federal

National Marine Fisheries Service
Environmental Assessment Branch
Pivers Island
Beaufort, NC 28516
919/728-4595

Office of Ocean and Coastal Resource
Management
National Oceanic and Atmospheric
Administration
U.S. Department of Commerce
1825 Connecticut Avenue, N.W.
Universal South Building
Washington, DC 20235
202/673-5138

U.S. Army Corps of Engineers
Wilmington District
P.O. Box 1890
Wilmington, NC 28402-1890
919/343-4745 (environmental assessment)
919/343-4629 (regulatory functions)

U.S. Environmental Protection Agency
Region IV
345 Courtland Street
Atlanta, GA 30365
404/881-4727 (ecological review branch)

U.S. Fish and Wildlife Service
Division of Ecological Services
310 New Bern Avenue, Room 466
Raleigh, NC 27601
919/755-4520

State

N.C. Department of Administration
Administration Building
116 W. Jones Street
Raleigh, NC 27611
919/733-7232

Office of State Property
919/733-4346

N.C. Department of Cultural Resources
Archives-Library Building
109 E. Jones Street
Raleigh, NC 27601
919/733-4867

Division of Archives and History
919/733-7305

N.C. Department of Human Resources
Albemarle Building
325 N. Salisbury Street
Raleigh, NC 27611

Division of Health Services
Environmental Health Section
919/733-2870

Shellfish Sanitation Unit
P.O. Box 769
Morehead City, NC 28557
919/726-7021

N.C. Department of Natural Resources
and Community Development
Archdale Building
512 N. Salisbury Street
Raleigh, NC 27611-7687
919/733-4984

Division of Community Assistance
919/733-2850

Division of Environmental Management
Water Quality Section
919/733-5083

Division of Land Resources
919/733-3833

Division of Water Resources
919/733-4064

Division of Soil and Water Conservation
919/733-2302

Wildlife Resources Commission
919/733-3391

Division of Marine Fisheries
P.O. Box 769
Morehead City, NC 28557
919/726-7021

N.C. Department of Transportation
Highway Building
1 S. Wilmington Street
Raleigh, NC 27601
919/733-2520

Environmental Planning Unit
919/733-7842

N.C. Office of Administrative Hearings
424 N. Blount Street
Raleigh, NC 27601
919/733-2691

Appendix Five

For Futher Reading

Annual Report 1987, Division of Coastal Management (Raleigh, N.C.: N.C. Department of Natural Resources and Community Development, 1988).

A Beach Access Handbook for Local Governments, Division of Coastal Management (Raleigh, N.C.: N.C. Department of Natural Resources and Community Development, 1985).

A Citizen's Guide to Coastal Water Resource Management, North Carolina Coastal Federation (Raleigh, N.C.: University of North Carolina Sea Grant College Program, 1988).

Design with Nature, Ian L. McHarg (Garden City, N.Y.: Doubleday and Company, Inc., 1971).

The Edge of the Sea, Rachel Carson (Boston: Houghton Mifflin Co., 1955).

From Currituck to Calabash, Living with North Carolina's Barrier Islands, Orrin H. Pilkey, Jr., William J. Neal, and Orrin H. Pilkey, Sr. (Research Triangle Park, N.C.: North Carolina Science and Technology Center, 1978).

Islands, Capes, and Sounds, The North Carolina Coast, Thomas J. Schoenbaum (Winston-Salem, N.C.: John Blair, 1982).

The Outer Banks of North Carolina, David Stick (Chapel Hill, N.C.: University of North Carolina Press, 1958).

Protecting Coastal Waters Through Local Planning, Division of Coastal Management (Raleigh, N.C.: N.C. Department of Natural Resources and Community Development, 1988).

Protecting Maritime Forests with Planning and Design, Division of Coastal Management (Raleigh, N.C.: N.C. Department of Natural Resources and Community Development, 1988).

Seacoast Life, An Ecological Guide to Natural Seashore Communities in North Carolina, Judith M. Spitsbergen (Raleigh, N.C.: North Carolina State Museum of Natural History, 1980).

Striking a Balance, Reflections on Ten Years of Managing the North Carolina Coast, Division of Coastal Management (Raleigh, N.C.: N.C. Department of Natural Resources and Community Development, 1985).

Vegetation Planting for Estuarine Shoreline Stabilization, Jean G. Watts (Raleigh, N.C.: Division of Coastal Management, N.C. Department of Natural Resources and Community Development, 1987).

Your Place at the Beach: A Buyer's Guide to Vacation Real Estate, Walter Clark (Raleigh, N.C.: University of North Carolina Sea Grant College Program and the N.C. Real Estate Commission, 1987).

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